**FACSIMILES**

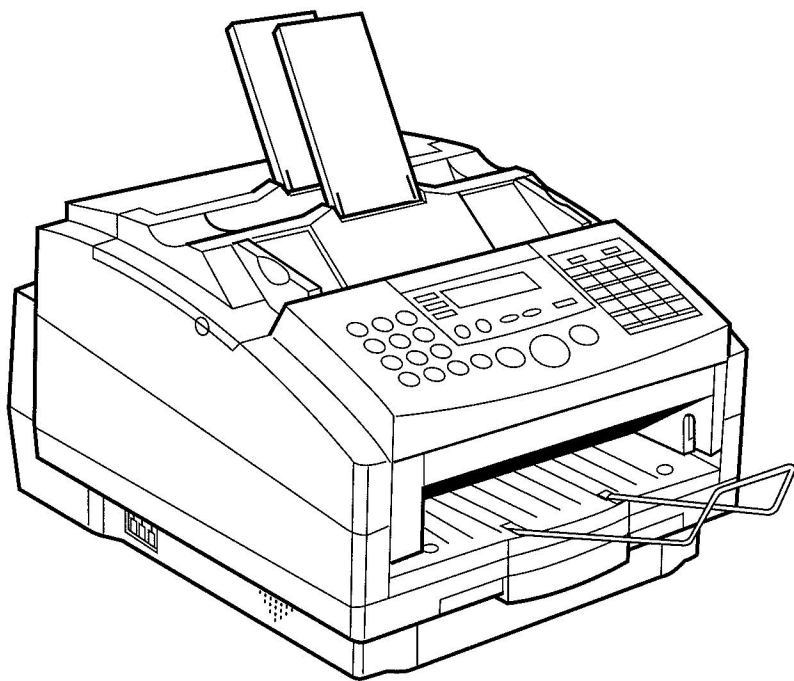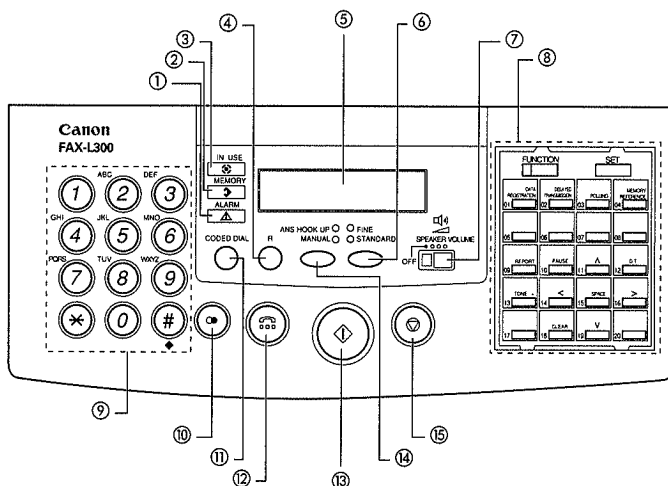# Canon
# FAX-L300

## ① ALARM lamp
Flashes when there is a paper jam, when the fax is out of paper or toner, when there is no cartridge installed, when the loaded paper size is incorrect, or when the printer door or front cover are open.

## ② MEMORY lamp
Lights when a document has been received in memory.

## ③ IN USE lamp
Lights when the telephone line is being used.

## ④ R button (UK, ECG) I.P. (ECF)
Press to dial an outside telephone number when the fax is connected through a switchboard (PBX).

## ⑤ LCD Display
Displays messages and prompts during operation. Displays selections, text, and names when registering information.

## ⑥ FINE/STANDARD button
Use to set resolution for the type of document you want to send.

## ⑦ SPEAKER VOLUME switch
Set the monitor volume of the speaker with this switch.

## ⑧ One-Touch Speed Dial/Special Function buttons
Use these buttons for One-Touch Speed Dialling and to perform special operations.

## ⑨ Numeric buttons
Use the numeric buttons to enter phone numbers when dialling. These buttons also enter text, numbers, and symbols when registering names and numbers.

## ⑩ (REDIAL) button
Press to dial the previous number dialled with numeric buttons.

## ⑪ CODED DIAL button
Press this button and then press a 2-digit number code under which you have previously registered a facsimile or telephone number for Coded Speed Dialling.

## ⑫ (HOOK) button
Press to dial with the numeric buttons when using manual sending.
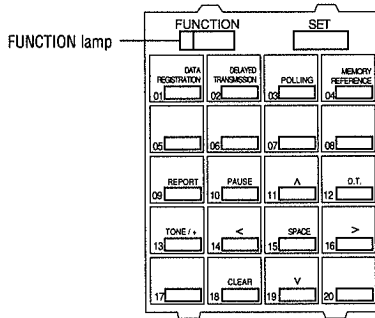
## ⑬ (START/COPY) button
Press to start sending, receiving, copying, and other operations.

## ⑭ ANS HOOK UP/MANUAL button
When both lamps are off, the fax is set for automatic receiving. Press and light ANS HOOK UP when an answering machine is connected. Press and light MANUAL for manual document receiving.

## ⑮ (STOP) button
Press to cancel sending, receiving, or registering data, or to cancel any other operation.

2

FUNCTION lamp ———



- **FUNCTION button**

  Use to select special functions such as Data Registration and Polling. The FUNCTION lamp must be lit to select these functions.

- **SET button**

  Use to accept special function settings and activities.

  The following buttons perform special operations when the FUNCTION lamp is on:

- **DATA REGISTRATION button**

  Press to start data registration for facsimile numbers, names, and other important settings for sending, receiving and printing.

- **DELAYED TRANSMISSION button**

  Press to start registering a time for delayed sending.

- **POLLING button**

  Use for polling receiving.

- **MEMORY REFERENCE button**

  Use to delete or resend documents stored in memory, or print a document or a list of documents in memory or memory TX.

- **REPORT button**

  Use to print activity reports.

- **Search buttons (∧, ∨)**

  Use to scroll through selections during data registration.

- **Cursor buttons (<, >)**

  Use to move the cursor during data registration.

- **SPACE button**

  Press to enter a space between numbers or letters when you register facsimile numbers and names.

- **CLEAR button**

  Press during data registration to clear a number or name.

- **TONE/+ button**

  Press to use tone dialling, even if your fax is connected through a pulse dial telephone. Press also to enter a + in your facsimile number.

- **PAUSE button**

  Press to enter pauses between digits when dialling or registering facsimile numbers.
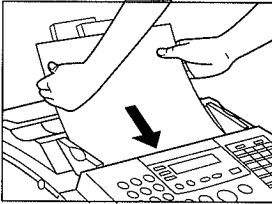
- **D.T. button**

  Press to confirm the dial tone when dialling a telephone number.

3

## MANUAL SENDING

Manual Sending dials the number, makes the connection, and sends the fax immediately. It also lets you talk to the other party before sending the document. This is useful when the other party uses a single phone line for both voice and fax transmissions. You must use the handset for Manual Sending.
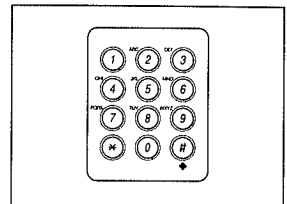
# 1 Regular Dialling _____ (3-6...3-7)
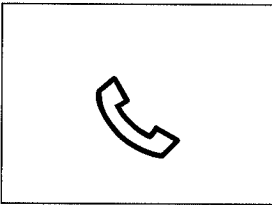


**1** Feed the document face-down into the Automatic Document Feeder (ADF).
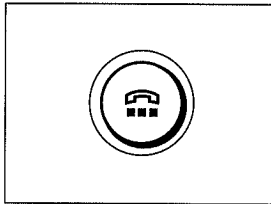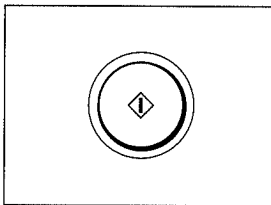


**2** Press HOOK.



**3** Dial the fax number you're sending to. Use the numeric buttons to enter the number.



**4** When you hear the other party answer, pick up the handset and tell them to get ready to receive a fax by pressing the start button on their fax machine. (You will hear a fax sound over the handset when they do this.)



**5** Press START/COPY and hang up. The fax begins sending your document.

# 2 Using One-touch Speed Dialling _____ (5-4)



**1** Feed the document face-down into the Automatic Document Feeder (ADF).



**2** Press HOOK.



**3** Press the One-touch Speed dialling button assigned to the number to which you wish to fax.

*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*
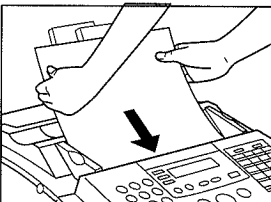
4

4 When you hear the other party answer, pick up the handset and tell them to get ready to receive a fax by pressing the start button on their fax machine. (You will hear a fax sound over the handset when they do this.)

5 Press START/COPY and hang up. The fax begins sending your document.

## 3 Using Coded Speed Dialling _____ (5-7)

1 Feed the document face-down into the Automatic Document Feeder (ADF).
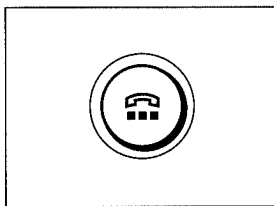
2 Press HOOK.
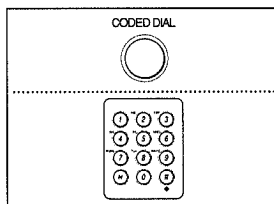
3 Press CODED DIAL and use the numeric buttons to enter the desired two-digit code (00-99).
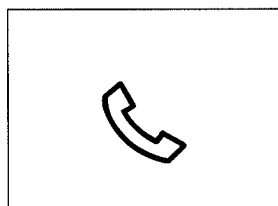
4 When you hear the other party answer, pick up the handset and tell them to get ready to receive a fax by pressing the start button on their fax machine. (You will hear a fax sound over the handset when they do this.)
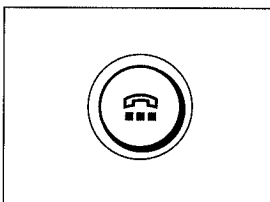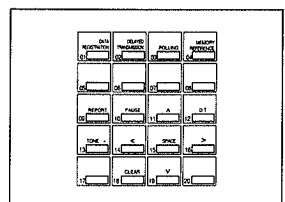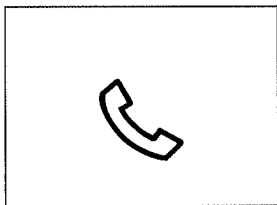
5 Press START/COPY and hang up. The fax begins sending your document.

*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*
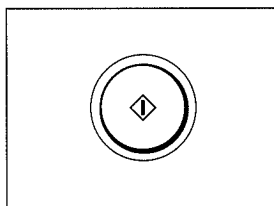
Memory Sending scans your document into the fax's memory. Memory Sending allows you to load faxes into memory while the fax performs other tasks, such as transmitting a fax. It also lets you send to numbers that are often busy (it automatically redials), or to send to more than one fax number.

## 1 Regular Dialling _____ (3-6...3-7)
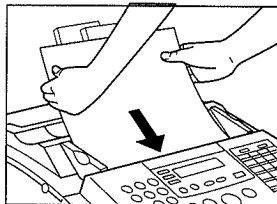


**1** Feed the document face-down into the Automatic Document Feeder (ADF).
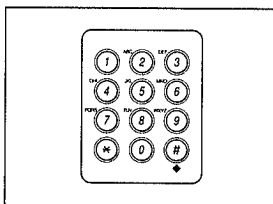
**2** Dial the fax number you're sending to. Use the numeric buttons to enter the number.
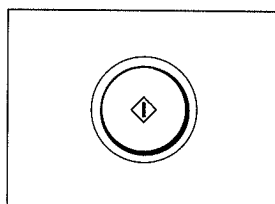
**3** Press START/COPY. The fax scans the document into memory and begins sending.

## 2 Using One-touch Speed Dialling _____ (5-4)
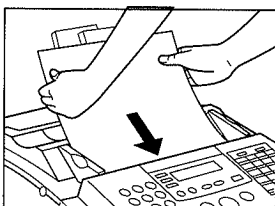


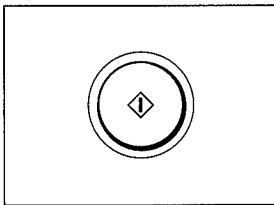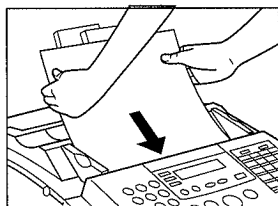**1** Feed the document face-down into the Automatic Document Feeder (ADF).
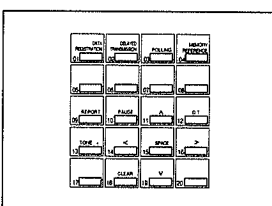
**2** Press the One-touch Speed dialling button assigned to the number to which you wish to fax.
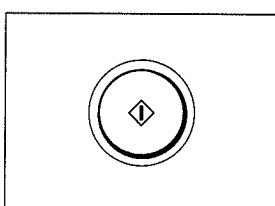
**3** Press START/COPY. The fax scans the document into memory and begins sending. (The transmission starts after 10 seconds even if you don't press START/COPY).

*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

# 3 Using Coded Speed Dialling ——————————— (5-7)
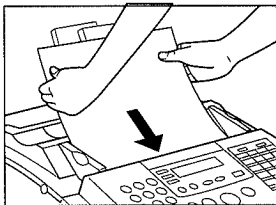


1 Feed the document face-down into the Automatic Document Feeder (ADF).
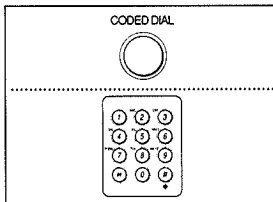


2 Press CODED DIAL and use the numeric buttons to enter the desired two-digit code (00-99).
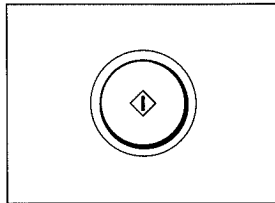


3 Press START/COPY. The fax scans the document into memory and begins sending. (The transmission starts after 10 seconds even if you don't press START/COPY).

# 4 Sending to More than One Location ——————————— (5-16)
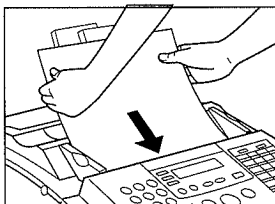


1 Feed the document face-down into the Automatic Document Feeder (ADF).
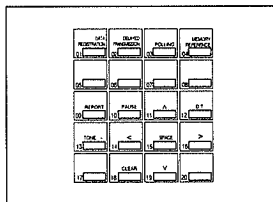


2a Press the appropriate One-touch Speed dialling buttons. Simply dial the numbers one after the other.

OR
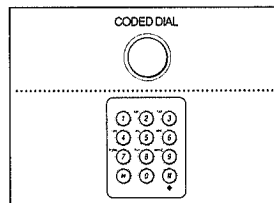


2b Press CODED DIAL and use the numeric buttons to enter the appropriate two-digit codes. Make sure you press CODED DIAL before you enter each code.
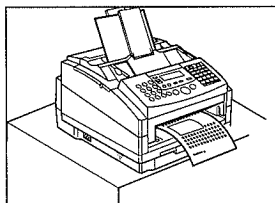


3 The fax scans the document into memory and begins sending approximately 10 seconds after you pressed the last button.

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*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

## REDIALLING

# 1 Automatic Redialling (in Memory Sending) ——— (3-10)

If the line is busy or there is no answer, the fax waits two minutes and then dials the same number.
When the fax is waiting to redial, the following messages are displayed.

```
23/07 '95 FRI 12:34
AUTO REDIAL
```

▼

```
23/07 '95 FRI 12:34
TX/RX NO.      0040
```

# 2 Manual Redialling ——————————— (3-10)
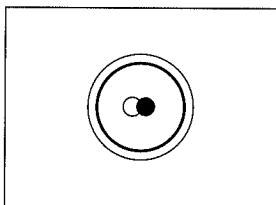
**To redial the last number
dialled with the numeric
buttons, press ⊙ (REDIAL).**

## RECEIVING DOCUMENTS

# 1 Automatic Receiving ——————————— (4-2...4-3)

The fax is set for Automatic Receiving by pressing the button below the ANS HOOK UP and MANUAL indicator lamps:
both lamps must be OFF.

### 1a Fax-only Receiving – AUTO RX

Fax-only Receiving answers all calls, but accepts only those from fax machines and disconnects all others. (This is
the default setting.)

### 1b Fax/Telephone Auto-switch Receiving – FAX/TEL AUTO SWITCH

Use Fax/Telephone Auto-switch Receiving when you have a combined fax/telephone line. If the call is from a fax,
your fax receives the document transmission without ringing. If the call is from a telephone, your fax rings to alert
you to pick up the handset to answer the call.

## 2 Manual Receiving _____ (4-8)

The fax is set for Manual Receiving by pressing the button below the MANUAL indicator lamp: the MANUAL lamp must be ON.

For Manual Receiving, you need to have the optional handset installed or an extension telephone connected.

The fax rings every time it receives a call, whether the call is from a telephone or a fax machine.
Pick up the handset, when the phone rings. Press **START/COPY** (when using the handset) or enter **25** (when using the extension phone) to start receiving the fax. Place the handset in its cradle. The fax machine starts receiving.

## 3 Receiving Documents in Memory _____ (4-11)

When the fax unit is receiving a fax, it automatically stores unprinted pages in memory if:

- the fax runs out of paper.
- the fax runs out of toner.
- there is no toner cartridge installed.
- the paper size specified in the FAX PRINTER SETUP is different to the paper size in the paper cassette.
- a paper jam has occurred.
- the message OUTPUT TRAY FULL is displayed.

The fax displays the following messages telling you which of the above has occurred:

SUPPLY REC. PAPER
REPLACE CARTRIDGE
INSTALL CARTRIDGE
CHECK PAPER SIZE
REC. PAPER JAM

Once you have solved the problem indicated by the error message above, the fax will automatically print the unprinted pages stored in memory.

*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

# LOADING PAPER

## 1 Loading Paper _____ (2-22...2-25)

When the message SUPPLY REC.PAPER appears in the display, you need to add paper to the paper cassette.
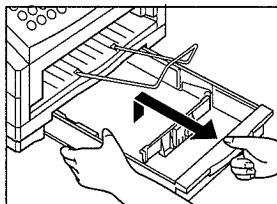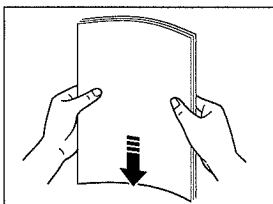


| 1 Lift the paper cassette slightly and pull it out. | 2 Before loading the paper, stack it so that the leading edge and the sides of the paper are even. | 3 Load the stack of paper into the paper cassette. |



| 4 Make sure the stack is not higher than the limit marks ▼▼▼ on the sides of the cassette, and is under the tabs on the paper selector. | 5 Gently insert the paper cassette into the fax until it clicks into position. |
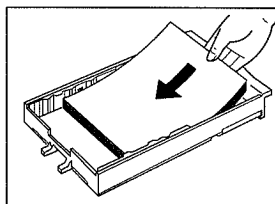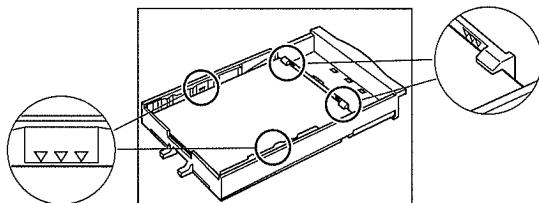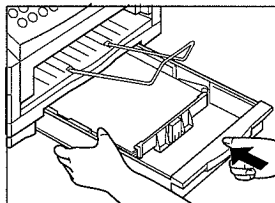
# CLEARING DOCUMENT AND PAPER JAMS

## 1 Clearing Document Jams _____ (8-2)

If CHECK DOCUMENT is displayed, then remove the document as described.
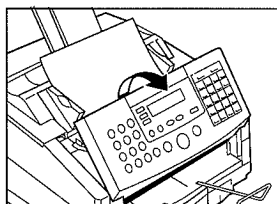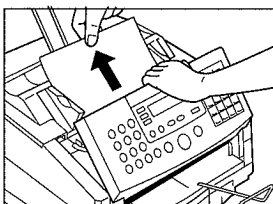


| 1 Lift and open the operation panel. | 2 With the operation panel open, remove the document by pulling it up. | 3 Close the operation panel by pressing it down from the centre. Press STOP. |
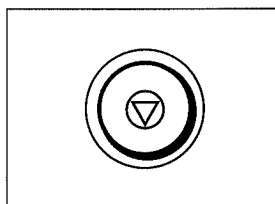
*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

# 2 Clearing Recording Paper Jams ———— (8-3...8-8)

If REC.PAPER JAM is displayed, then clear the fax paper jam as described.

## 2a Paper Jams *in the Cassette Area*
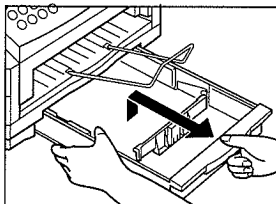


1 Remove the paper cassette.
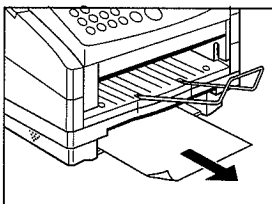
2 If there is any jammed paper inside the fax, gently pull it out of the unit being very careful not to tear it.
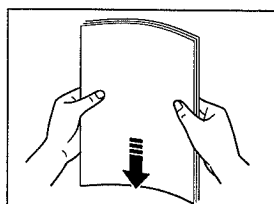
3 Remove the stack of paper from the cassette. Fan the paper and tap it on a flat surface to even out the stack.
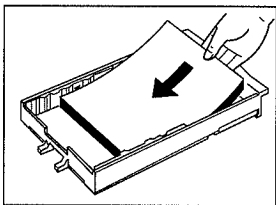


4 Reinsert the stack into the cassette.
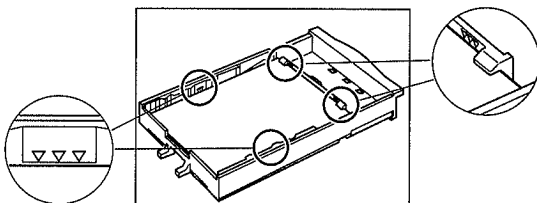
5 Make sure the stack is not higher than the limit marks ▼ ▼ ▼ and that it fits under the tabs on the paper selector. Replace the paper cassette.

If the error message REC. PAPER JAM remains displayed, there may be more jammed paper in other areas. Check the other areas as described below.

## 2b Paper Jams *inside the Fax*
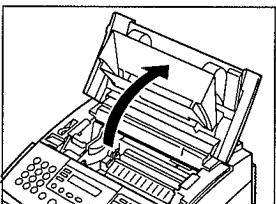


6 Open the printer door by grasping it on both sides and lifting it up. Remove the toner cartridge from the fax.
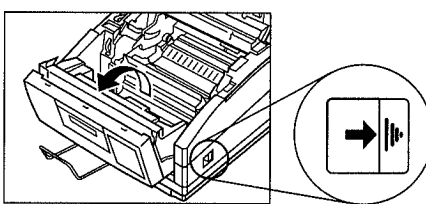
7 Use the front cover release latch to open the front cover.

Do not open the front cover without pushing the release latch, as this may cause damage to your fax.

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*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

11
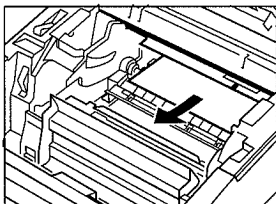
8 Check where the paper is jammed.
If the leading edge of the jammed paper is visible, gently pull it out.

9 The toner is not yet fixed to the paper in this area; take care not to dirty yourself or the inside of the fax.
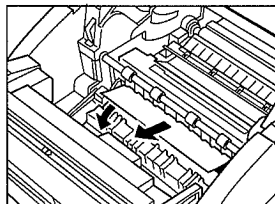
10 Lower the plastic cover and gently remove any jammed paper from the unit by pulling it *forward*.
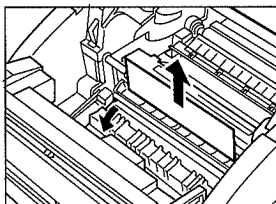
11 If necessary, gently pull the paper *upwards* to remove it from the fax.
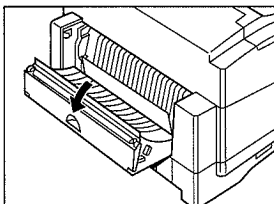
12 Open the rear cover.
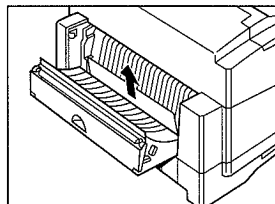
13 Gently pull out any jammed paper from the rear area.
Close the rear cover, replace the toner cartridge, and close the printer door and front cover.

## MAKING COPIES

# 1 Making Copies ——————————— (5-24)
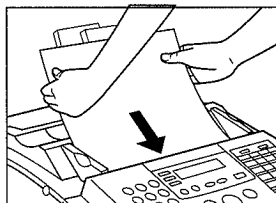


1 Feed the document face-down into the Automatic Document Feeder (ADF).
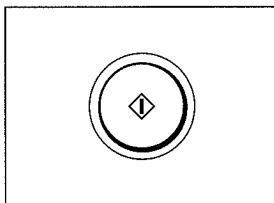
2 Press START/COPY.
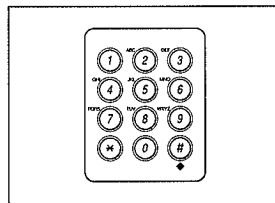
3 If you want more than one copy, use the numeric buttons to enter the number of copies you want (up to 99).
Press START/COPY.

*The numbers in parentheses indicate the pages in the Canon FAX-L300 User's Guide on which you can find further details.*

# Canon

# FAX-L300

## Installation Guide

**ENGLISH**

This guide lists the sections of the FAX-L300 User's Guide you will need to set up the facsimile and get ready to use it. The numbers in parentheses indicate the pages in the User's Guide on which you can find detailed instructions.

\* Marked procedures are included in this guide for your convenience.

Before setting up your fax, be sure to remove all shipping materials as described below:

**1** Remove the shipping tapes from the printer door.
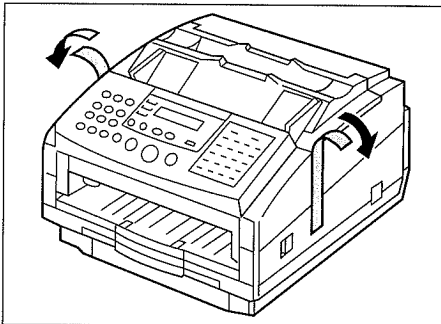
**2** Remove the protective sheet from inside the operation panel.
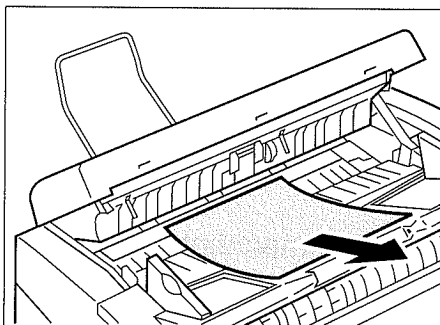
# Assembling Your Fax

Attach the following parts to your fax as explained below:

**Output Tray and Document Support for ADF**
Insert one tab first into the slot, then the other tab into the other slot. Make sure that the output tray and document support for ADF rest back.

**One-Touch Faceplate**
Fit the tabs on the one-touch faceplate into the slots on the fax.
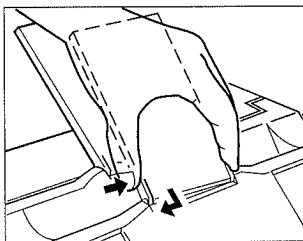
**Local-Language Label***
Peel the protective sheet from the self-adhesive operation panel label, carefully align it and attach it, bottom edge first, in the position shown.

Bottom edge
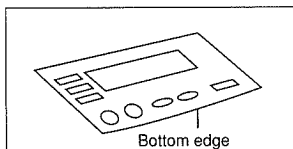
* Available for a limited number of languages.
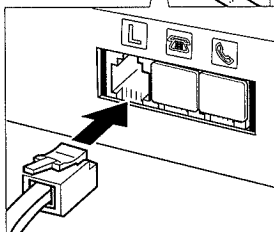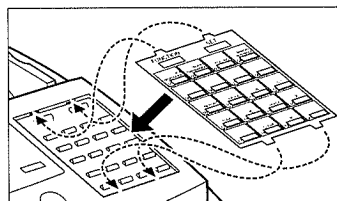
**Telephone Line**
Connect the telephone line to the input jack marked L.
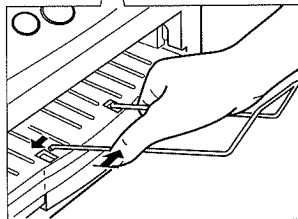
**Document Support for Scanned Documents**
Insert the ends of the document support into the slots on the fax.

See Appendix C "Options" of the FAX-L300 User's Guide for attaching the optional handset.

# Making Connections

**1**    Connect the telephone line to the fax jack marked ⌐.
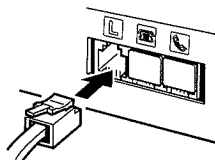
**2**    If you wish to connect a telephone or optional handset to the fax, remove the cover of the jack marked ☎.
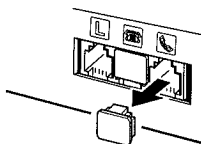
**3**    Connect the end of the telephone or optional handset cord to the jack marked ☎.
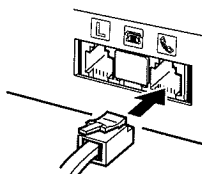
**4**    To connect an extension phone or answering machine to the fax, remove the cover of the jack marked ☎.
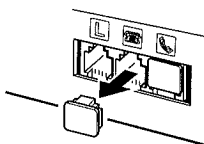
**5**    Connect the end of the extension phone or answering machine cord to the jack marked ☎.
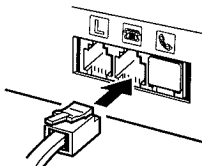
**1** To connect the power cord, plug the cord into the power receptacle on the fax, and then into a 200–240 V AC power outlet.

- The fax has no power switch, so its power is on as soon as you plug it in. Once powered up, though, the unit still needs to warm up before you can use it.
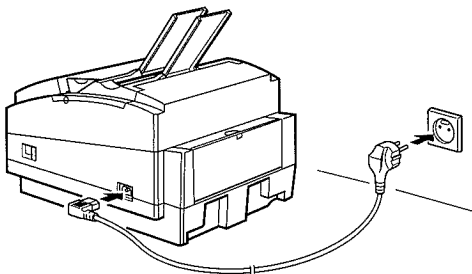


# Installing the Toner Cartridge

**1** Remove any documents or printed pages from the fax.

**2** Make sure the unit is plugged in.

**3** Open the printer door by grasping it at both sides and lifting it up.
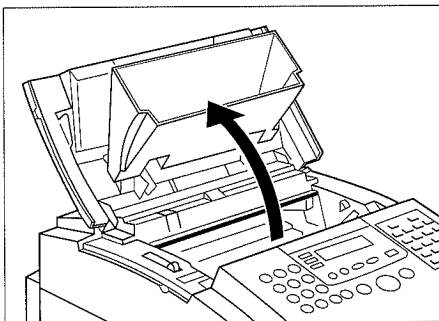


**4** Remove a new toner cartridge from its protective bag.

- Save the protective bag. You may need to repack and transport it in the future.

**5** Gently rock the cartridge from side to side five or six times.

• This evenly distributes the toner inside.
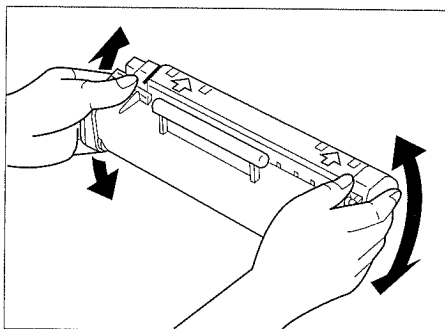
**6** Place the cartridge on a flat, clean surface, and steady it with one hand. Then remove the seal by gently pulling on the plastic tab with your other hand.

• Use a firm, even pull to remove the plastic seal. To avoid breaking the seal, do not jerk on it unevenly.
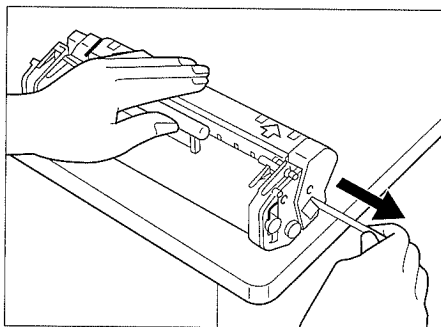
Side view
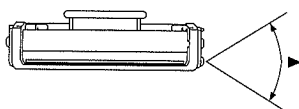
Pull in this direction

Top view
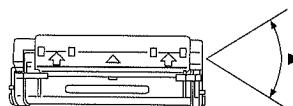
Pull in this direction

**7** Hold the cartridge by its handle and insert as follows:

- Make sure the round large tabs on the sides of the cartridge are aligned with the arrow marks (►, ◄) on the printer.
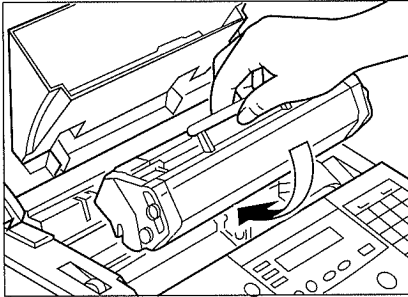
- Align the arrow marks on the cartridge (▲) with the arrow marks on the inside of the fax (▼).
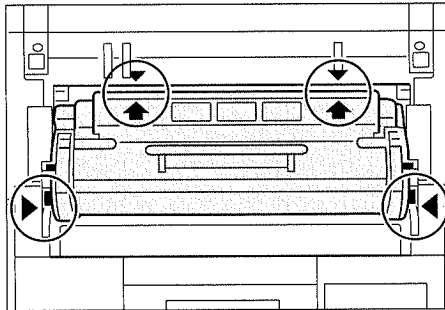
**8** Gently slide the cartridge down and back and *push firmly until it clicks into position.*

- Make sure the cartridge is set all the way into the unit. Otherwise the fax won't operate properly.
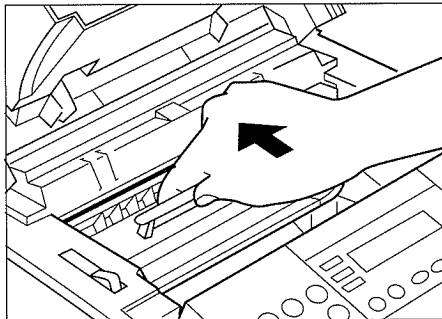
**9** Gently close the printer door.
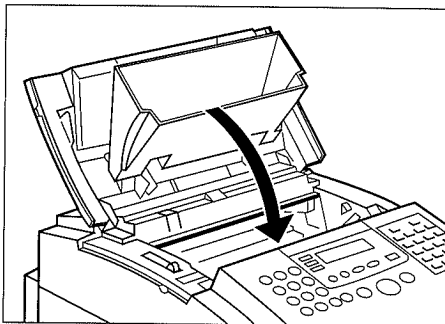
## Loading Recording Paper

**1** Lift the paper cassette slightly and pull it out.
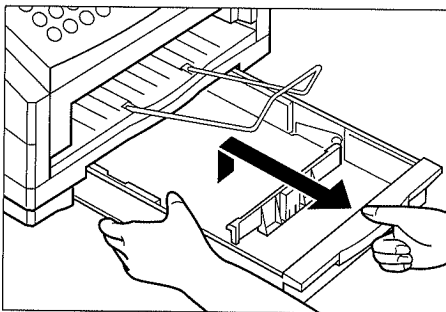
**2** Before loading the paper, stack it so that the leading edge and sides of the paper are even.

**3** Load the stack of paper into the paper cassette.

- Make sure the paper stack is not higher than the limit marks (▼ ▼ ▼) on the sides of the cassette, and is under the tabs on the paper selector.

- Check all corners and edges of the paper stack to be sure they are flat and even.
- The cassette can hold about 250 sheets of paper (standard paper).

**4** Gently insert the paper cassette into the fax until it clicks into position.

- If the paper cassette is not installed correctly, the received document image might shift, or the recording paper might jam.

# Setting the Telephone Line Type

Your fax is factory set to work with rotary pulse telephone lines. If you have a touch tone line, you will need to change the telephone line setting. Follow the procedure below:

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION   DATA REGISTRATION   ∨   SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Use the search buttons to display 10. TEL LINE TYPE.

∧   ∨

```
USER SETTINGS
10.TEL LINE TYPE
```

**3** Press SET, then use the search buttons to select TOUCH TONE.

SET   ∧   ∨

```
TEL LINE TYPE
       TOUCH TONE
```

**4** Press SET to save your selection, and press STOP to return to standby mode.

SET   ⊚

# Entering the Date and Time

Follow the steps below to set the date and time for your fax. The date and time appear on the documents you send as well as in the display.

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION   DATA REGISTRATION   ∨   SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Press SET and use the numeric buttons to enter the correct date and time. Use the 24-hour system for the time (5:20 p.m. would be 17:20, for example).

SET   Ex:②③⓪⑦⑨⑤  ①②③④

```
DATE & TIME
23/07 '95 FRI 12:34
```

**3** Press SET to save the date and time, then press STOP to return to standby mode.

SET   ⊚

# Guidelines for Registering Information

Use the numeric buttons to enter numbers, letters, and symbols.

| Button | Uppercase | Lowercase |
|--------|-----------|-----------|
| 1 | | |
| 2 | ABCÅÄÁÀÃÂÆÇ | abcåäáàãâæç |
| 3 | DEFÐËÉÈÊ | defðëéèê |
| 4 | GHIÏÍÌÎ | ghiïíìî |
| 5 | JKL | jkl |
| 6 | MNOÑØÖÓÒÕÔ | mnoñøöóòõô |
| 7 | PQRS Þ | pqrs þ |
| 8 | TUVÜÚÙÛ | tuvüúùû |
| 9 | WXYZÝ | wxyzý |
| 0 | | |
| * | →Uppercase—→Lowercase—→Number— | |
| # | -.*#!",;: ^`_=/I'?$@%&+()[]{}<> | |

Each button contains a letter group; an upper case set, followed by a lower case set of characters. Every time you press, the character changes to the next one in the group.

Follow these guidelines when you enter information into the fax:

- If you pause and do not make an entry for more than 60 seconds, the fax returns to standby mode. You will then have to start entering the information all over again.
- If you make a mistake while making an entry, you can press **CLEAR** and repeat the entry, or press ⊗ (**STOP**) and start again.

# Registering Your Fax Number and Name

Follow the steps below so that your fax number and name appear on the top of each document you send.

**ACTION**                                    **DISPLAY**
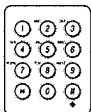
**1**

| USER SETTINGS |
| 1.DATE & TIME |

**2** Use the search buttons to display 2. UNIT TELEPHONE #.

| USER SETTINGS |
| 2.UNIT TELEPHONE # |

**3** Press **SET** and enter your fax number–up to 20 digits–using the numeric buttons.

```
UNIT TELEPHONE #
TEL=    503 555 1212
```

**4** Press **SET** to save the fax number, then press **SET** again to display 3. UNIT NAME.

```
USER SETTINGS
3.UNIT NAME
```
```
UNIT NAME       :A
_
```

**5** Enter your name or your company name–up to 24 characters–using the numeric buttons.

Ex: CANON INC

```
UNIT NAME       :A
CANON INC
```

**6** Press **SET** to save the name, then press **STOP** to return to standby mode.

**Canon**

# FAX-L300

## User's Guide

# Canon
# FAX-L300

## User's Guide

Although this equipment can use either loop disconnect or DTMF signalling, only the performance of the DTMF signalling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signalling for access to public or private emergency services. DTMF signalling also provides faster call set up. {UK}

**Copyright**

EPA POLLUTION PREVENTER

As an Energy Star Partner, Canon has determined that the FAX-L300 meets the Energy Star guidelines for energy efficiency.

## TO BE PROVIDED BY CANON UK.

## NOTICE FOR CONNECTION TO TELECOMMUNICATION SYSTEMS IN THE UNITED KINGDOM

1. BABT Certificate Number/Approval Number for the Canon FAX-L300:

   NS/1056/3/R/604543

   APPROVED for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

2. This apparatus has been approved for the use of the following facilities.

   1. Storage of telephone numbers for retrieval by a predetermined code. (If problems occur, verify stored number).

   2. Automatic call initiation.

   3. Operation in the presence or absence of initial or secondary proceed indication.

   4. Automatic dialling facilities.

   5. Automatic storage of last number dialled.

   6. Automatic repeat attempt facilities.

   7. Auto clear from the call originating end.

   8. Series connection facility.

   9. Modem

   10. Automatic answer.

   11. Automatic selection of incoming facsimile or telephone calls.

   Any other usage will invalidate the approval of the apparatus if as a result, it then ceases to conform to the standards against which approval was granted.

3. This apparatus may be used on telecommunication systems employing loop disconnect or MF signalling.

4. This apparatus is suitable for connection only to direct exchange lines on the PSTN directly or via a compatible PABX. The supplier of the apparatus should be consulted for an up to date list of PABXs with which the apparatus is compatible.

   It cannot be guaranteed that the apparatus will operate under all possible conditions of connection to compatible PABX. Any cases of difficulty should be referred in the first instance to the supplier of the apparatus.

5. Ringer Equivalence Number (REN) = 1

   The REN is a customer guide indicating approximately the maximum number of items of apparatus that should be connected simultaneously to the line. Correct operation cannot be guaranteed in installations with mixed types of apparatus.

   The sum of the REN's of the individual items should not exceed 4. The REN value of a BT telephone is assumed to be 1 unless otherwise marked.

   Any telephones or other approved terminal must be connected to the appropriate socket on the facsimile apparatus only.

6. The series connection facility detects the off-hook condition of any associated terminal. The voltage drop introduced by the apparatus between the PSTN and the associated terminal at a current of 40 mA d is 750 millivolts.

   The apparatus should not be used in conjunction with other series connected apparatus such that the aggregate declared voltage drops of all the apparatus, together with the voltage drop introduced at 40 mA d by any separate wiring that is used to link apparatus, exceeds 2.0 Volts.

   Only one FAX-L300 may be connected between other terminal apparatus and the telephone network.

**C E**

This CE Marking shows compliance of this equipment with Directive 73/23/EEC and Directive 89/336/EEC (as amended by Directive 92/31/EEC), both as amended by Directive 93/68/EEC.

L'estampille CE indique que ce matériel est conforme aux dispositions de la Directive 73/23/CEE et de la Directive 89/336/CEE (modifiée par la Directive 92/31/CEE), toutes deux modifiées par la Directive 93/68/CEE.

Diese CE-Markierung weist darauf hin, daß dieses Gerät mit Richtlinie 73/23/EWG und der durch Richtlinie 92/31/EWG geänderten Richtlinie 89/336/EWG übereinstimmt, die beide durch Richtlinie 93/68/EWG geändert wurden.

Denne CE-mærkning indikerer, at dette udstyr følger Direktiv 73/23/EU og Direktiv 89/336/EU (som udvidet med Direktiv 92/31/EU), begge som udvidet med Direktiv 93/68/EU.

CE Märkningen visar att denna utrustning följer direktiven 73/23/EEC och 89/336/EEC (komplement till 92/31/EEC) båda som komplement till direktiv 93/68/EEC.

CE merkintä osoittaa tämän tuotteen yhteensopivuuden direktiivien 73/23/EEC ja 89/336/EEC (täydennetty direktiivillä 92/31/EEC) kanssa, joita on täydennetty direktiivillä 93/68/EEC.

Dette CE merket viser at utstyret er i samsvar med EU direktivene 73/23 og 89/336 (med korreksjon av EU direktiv 92/31), begge med korreksjon av EU direktiv 93/68.

Deze CE markering toont aan dat het product in overeenstemming is met de richtlijnen 73/23/EEC en 89/336/EEC (zoals geammendeerd door richtlijn 92/31/EEC), welke beide zijn geammendeerd door de richtlijn 93/68/CEE.

Questo contrassegno CE indica che l'apparecchio è conforme alle Direttive CEE 73/23 e 89/336 (successivamente modificata con la Direttiva 92/31), entrambe modificate con la Direttiva 93/68.

Este símbolo CE indica que el equipo cumple con las Directivas 73/23/EEC y 89/336/EEC (según la enmienda a la Directiva 92/31/EEC), ambas según la enmienda de la Directiva 93/68/EEC.

Esta marca CEE indica que este equipamento está de acordo com as Directivas 73/23/EEC e 89/336/EEC (conforme amenda da directiva 92/31/EEC), ambas amendas da directiva 93/68/EEC.

Αυτή η CE σήμανση δηλώνει την συμφωνία της Συσκευής με την Οδηγία 73/23/EEC και την Οδηγία 89/336/EEC (όπως τροποποιήθηκαν από την Οδηγία 92/31/EEC), όπως αμφότερες έχουν τροποποιηθεί από την Οδηγία 93/68/EEC.

Oznaka CE prikazuje, da oprema ustreza predpisu 73/23/EEC, in kot to predpisuje predpis 93/68/EEC.

A CE jelzés tanúsítja, hogy a berendezés megfelel az EEC 92/31 és 93/68 előírásokkal módosított EEC 73/23 és 89/336 követelményrendszernek.

Oznaczenie CE jest potwierdzeniem zgodności niniejszego urządzenia z wymaganiami Dyrektywy 73/23/EEC oraz Dyrektywy 89/336/EEC (zgodnie ze zmianami Dyrektywy 92/31/EEC), obie uzupełnione przez Dyrektywę 93/68/EEC.

Značka CE indikuje, že toto zařízení odpovídá Směrnici 73/23/EEC a Směrnici 89/336/EEC (doplněné Směrnicí 92/31/EEC), které byly dále doplněny Směrnicí 93/68/EEC.

Käesolev CE-markeering näitab, et antud seade vastab Euroopa Liidu Direktiividele 73/23/EEC ja 89/336/EEC (koos muudatustega vastavalt Direktiivile 92/31/EEC) ning võttes arvesse, et mõlemaid direktiive on muudetud vastavalt Direktiivile 93/68/EEC.

CE marķējums norāda, ka šī iekārta atbilst prasībām, kas iekļautas EK direktīvās 73/23 un 89/336 (ar EK direktīvā 92/31 paredzētajām izmaiņām), kurās veikti labojumi saskaņā ar EK direktīvu 93/68.

Ženklas CE reiškia, kad šis įrenginys atitinka direktyvas 73/23/EEC ir 89/336/EEC (atlikus pataisas direktyva 92/31/EEC), kuriose buvo atliktos pataisos direktyva 93/68/EEC.

Маркировка CE указывает на то, что данное оборудование соответствует Директиве 73/23/EEC и Директиве 89/336/EEC (с изменениями в соответствии с Директивой 92/31/EEC) с изменениями, предписываемыми Директивой 93/68/EEC.

Маркування CE вказує на те, що дане обладнання відповідає Директивам МЕК 73/23/EEC і 89/336/EEC (із змінами у відповідності до Директиви 92/31/EEC) із змінами, що диктуються Директивою 93/68/EEC.

Fax IV

# Safety Information

⚠ Use of controls, adjustments or performance of procedures other than those specified in this user's guide may result in hazardous radiation exposure.

This label is attached to the laser scanner unit inside the fax and is not in a user access area.

```
┌─────────────────────────────────────────────────────────────┐
│  ⚠      DANGER    - Invisble laser radiation when open.       │
│                    AVOID DIRECT EXPOSURE TO BEAM.             │
│           CAUTION  - INVISIBLE LASER RADIATION WHEN OPEN.     │
│                     AVOID EXPOSURE TO BEAM.                   │
│  ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE.  │
│              EXPOSITION DANGEREUSE AU FAISCEAU.               │
│  VORSICHT  - UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFNET.│
│              NICHT DEM STRAHL AUSSETZEN.                      │
│  ATTENZIONE - RADIAZIONE LASER INVISIBLE IN CASO DI APERTURA. │
│               EVITARE L'ESPOSIZIONE AL FASCIO.                │
│  PRECAUTION- RADICION LASER INVISIBLE CUANDO SE ABRE.         │
│              EVITAR EXPONERSE AL RAYO.                        │
│  VARO!      - AAVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE        │
│              LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.            │
│                                                              │
│  VARNING!   - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. │
│              BETRAKTA EJ STRÅLEN.                             │
│  ADVARSEL! - USYNLIG LASER STRÅLING, NÅR DENNE ER ÅBEN.       │
│              UNDGÅ BESTRÅLING.                                │
│  ADVARSEL  - USYNLIG LASERSTRÅLING, NÅR DEKSEL ÅPNES.         │
│              UNNGÅ EKSPONERING FOR STRÅLEN.                   │
│  注 意     - このカバーの内部では不可視レーザー光が放射されています。│
│              レーザー光にさらされないようにしてください。    RS5-8169│
└─────────────────────────────────────────────────────────────┘
```

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# Part 3    Sending Faxes

# Part 4    Receiving Faxes

## Part 5    Special Features

# Appendix A    The Menu System

# Appendix B    Specifications

# Appendix C    Options

# Glossary

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# Introduction

**Part 1**

This chapter introduces you to your fax. It also explains how to get the most from the documents that come with the FAX-L300, and gives important safety instructions.

# Features of the Canon FAX-L300

Thank you for purchasing the new Canon FAX-L300 Facsimile Machine. The FAX-L300 is a G3 facsimile unit that allows you to send your documents in the shortest time possible at high speed. To gain the most benefit from all the new features, be sure to refer to this manual when you are not sure how to perform a task. The FAX-L300 will help you work more efficiently and expand your work capacity.
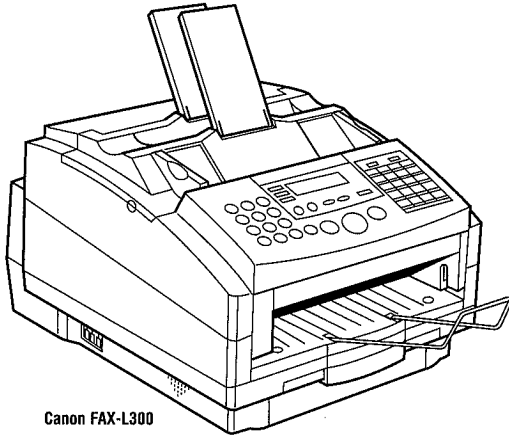
Canon FAX-L300

The FAX-L300 includes the following features:

■ **Excellent print quality**

Quiet, clean laser technology offers 400 × 400 dpi resolution for text and graphics.

■ **Automatic switching between fax and voice calls**

Fax/telephone switching allows you to receive fax messages and normal phone calls on a single line.

■ **Convenient paper handling**

The paper cassette holds up to 250 sheets of plain A4, letter, or legal paper, and the automatic document feeder (ADF) can hold up to 30 A4-size, letter-size or 20 legal-size pages.

■ **Simple maintenance**

When the toner runs out, simply replace the toner cartridge.

# Plain Paper Fax Features

- A transmission speed of six seconds per page*
- A fax memory that can store approximately 42 received pages, and up to 138 received pages with the optional 2 MB memory board installed*
- An Error Correction Mode (ECM) that reduces transmission errors
- Sophisticated networking features such as memory broadcasting, polling reception, restricted receiving and delayed transmission
- Automatic dialling methods, including One-Touch Speed Dialling, Coded Speed Dialling and Group Dialling

# Copier Features

- 400 × 400 dpi resolution
- Plain paper copier
- Up to 99 copies

# Telephone Features

- Automatic dialling methods, including One-Touch Speed Dialling and Coded Speed Dialling
- Connection for an answering machine or extension telephone
- On-hook dialling
- Optional handset available

* Based on the Canon FAX Standard Chart No.1

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# How to Use Your Documentation

The fax includes the following documentation to help you use the unit more effectively. Be sure to do the following before you begin setting up your fax:

■ Read this chapter to learn about your fax's features, and guidelines for operating your new equipment safely.

■ Carefully follow the instructions in Part 2, "Getting Started," to set up your fax properly.

■ Use the rest of this user's guide to master your fax's basic operating procedures (such as registering information, making copies, sending and receiving faxes, and using the telephone features), and to learn more about its special features (such as sending to more than one location, and receiving documents in memory). Keep this manual handy so you can refer to it when you have a problem or need particular information about the FAX-L300.

■ If you need help getting your fax to operate properly, see Part 8, "Troubleshooting." For the unit's technical specifications, see Appendix B.

If you still have questions about how to use your FAX-L300, feel free to contact your authorised Canon Facsimile Dealer's sales or service representative. They will be glad to answer your questions.

# Type Conventions

This manual uses the following type conventions to emphasize information:

Warnings tell you how to avoid actions that could injure you or others nearby.

Cautions tell you how to avoid actions that could damage your equipment.

Notes describe helpful hints, operating restrictions, or how to avoid minor difficulties.

In addition, this manual uses bold capital letters to show the names of buttons and switches on the fax, such as: **SET, FUNCTION,** or **STOP**. Text that appears in the unit's display, or the names of lamps, are shown using capital letters, such as: RECEPTION OK.

# Customer Support

Your Canon fax is designed with the latest technology to provide trouble-free operation. The warranty information at the back of this manual describes Canon's limited warranty for its products. Be sure to read this warranty information.

If you have a problem with your unit, try first to solve it by referring to the information in Part 8, "Troubleshooting." If you still can not solve the problem, contact your local Canon Facsimile Dealer.

If you think your fax needs service, only an authorised Canon Facsimile Service Dealer will do warranty service.

You must have your sales receipt for warranty service.

# Important Safety Instructions

Read these safety instructions thoroughly before using your fax, and refer to them later if you have any questions.

Except as explained in this manual, do not attempt to service your fax yourself. Never attempt to disassemble the unit: exposed power points inside the unit can cause electrical shock if you touch them. Take your fax to your local authorised Canon Facsimile Service Dealer for all service.

■ Follow all warnings and instructions marked on the fax.

■ Use the fax only on level, solid, stable surfaces.

■ The back and bottom of the fax's cabinet include slots and openings for ventilation. To help keep the fax from overheating (which can cause it to operate abnormally), do not block or cover these openings. Do not place the unit on a bed, sofa, rug, or other similar soft surface, or near a radiator or heat register. Also, do not place the fax in a closet, on shelves, or in a similar structure unless properly ventilated.

■ Operate the fax only from the type of power source indicated on the unit's label. If you are not sure of the type of power available, consult your dealer or local power company.

■ Make sure that the total amperage used by all products plugged into the wall outlet does not exceed the ampere rating of the outlet's circuit breaker.

■ Do not allow anything to rest on the power cord, and do not locate the fax where the cord will be walked on. Make sure the power cord is not knotted or kinked.

■ Do not use the fax near water or other liquids. If you spill liquid on or into the unit, unplug it immediately and call your local authorised Canon Facsimile Service Dealer.

■ Do not allow small objects (such as pins, paper clips, or staples) to fall into the fax. If something does fall into it, unplug the unit immediately and call your local authorised Canon Facsimile Service Dealer.

■ Keep your fax away from direct sunlight as this can damage the unit. If you have to place it near a window, install heavy curtains or blinds.

■ Avoid a location subject to extreme temperature fluctuation. Use in a room that is within a temperature range of 10° and 32.5°C.

■ Do not insert objects into the openings on the fax's cabinet, as they could touch dangerous voltage points or short out parts, possibly resulting in fire or electric shock.

■ After you unplug the fax, wait at least five seconds before you turn it back on.

■ Never unplug the fax during printing. This can cause the printing unit to jam.

■ Always unplug the fax during thunderstorms.

■ Always unplug the fax before moving or cleaning it.

■ Before you transport your fax, remove its toner cartridge. When you reinstall the unit in its new location, replace the toner cartridge.

■ Never lift the fax by its paper cassette – always hold it by the sides.
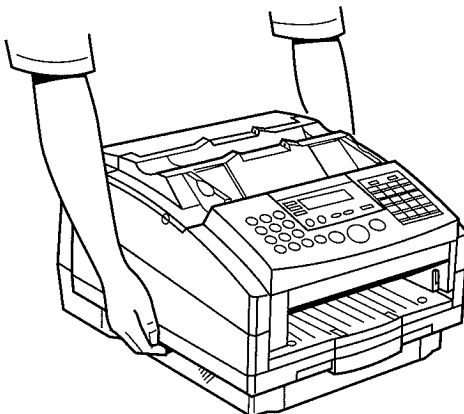
Unplug the fax from the wall outlet and refer servicing to your local authorised Canon Facsimile Service Dealer under the following conditions:

● When its power cord or plug is damaged or frayed.

● If liquid has been spilled on or into the unit.

● If you notice smoke or unusual noises or odors coming from it.

● If it does not operate normally when you have followed the operating instructions. Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls may result in damage and may require extensive work by a qualified technician to restore the product to normal operation.

● If it has been dropped or the cabinet has been damaged.

● If it begins performing poorly.

# Getting Started

This chapter tells you how to unpack your
Canon FAX-L300 and get it ready to send,
receive, and print documents.

# Setting Up Your Fax

## Choosing a Location for Your Fax

Before unpacking your fax, be sure to follow these guidelines to choose the best location for your fax.

- Choose a cool, dry, clean area:
  - Make sure the area is free from dust.
  - Make sure the area's temperature stays within 10 – 32.5°C.
  - Make sure the area's relative humidity stays within 20% – 80%.
  - Avoid direct sunlight. If you have to place the unit near a window, install heavy curtains or blinds.

- Place the fax near a standard 200–240 V AC power outlet and a telephone line with an RJ11-C wall jack.

- Do not plug the fax into a circuit that is also used by appliances such as air conditioners, electric typewriters, or copiers. Such appliances generate electrical noise that can interfere with faxing documents.

- Set the fax on a flat, sturdy, vibration-free surface.

- Do not set up the fax near a television, radio, or heavy equipment that can generate strong electromagnetic fields.

- Do not use or store the fax outdoors.

## Dimensions

Make sure there is enough room around the fax to allow adequate ventilation, and to allow paper to flow freely into and out of the unit. It requires this much space:

Top view

423 mm    445 mm   78.6 mm

81.5 mm

383 mm

Side view

435.2 mm

269 mm

Footprint

315 mm

265 mm

282.5 mm
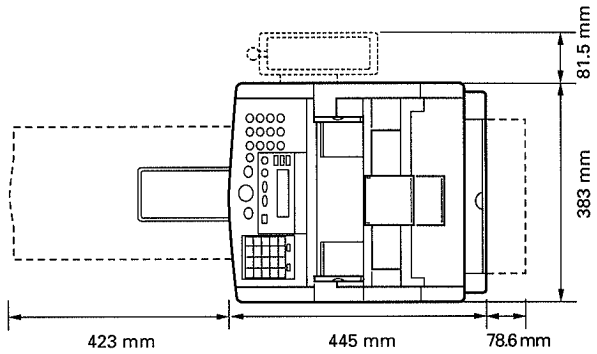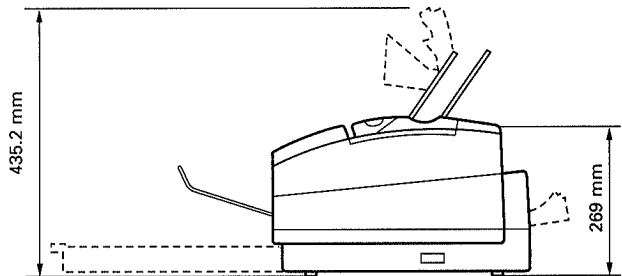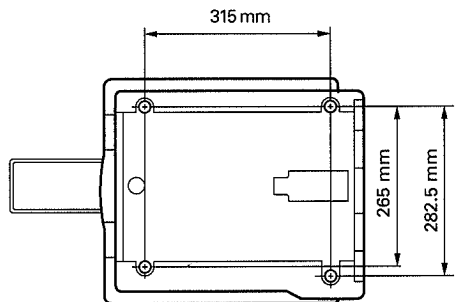
✔ If you need assistance installing your fax, contact your local Canon authorised service representative or your local telephone company.

## Do You Have Everything?

As you unpack the fax, save the carton and packing material in case you want to move or ship the unit in the future.

**1** Carefully remove all items from the box. You should have someone help by holding the box while you lift the fax and its protective packaging out of the carton.

User's Guide

One-touch Faceplate

Telephone line

Power Cord

2 Sub Trays (same size): Document Support for ADF and Output Tray

Document Support for Scanned Documents

Main unit
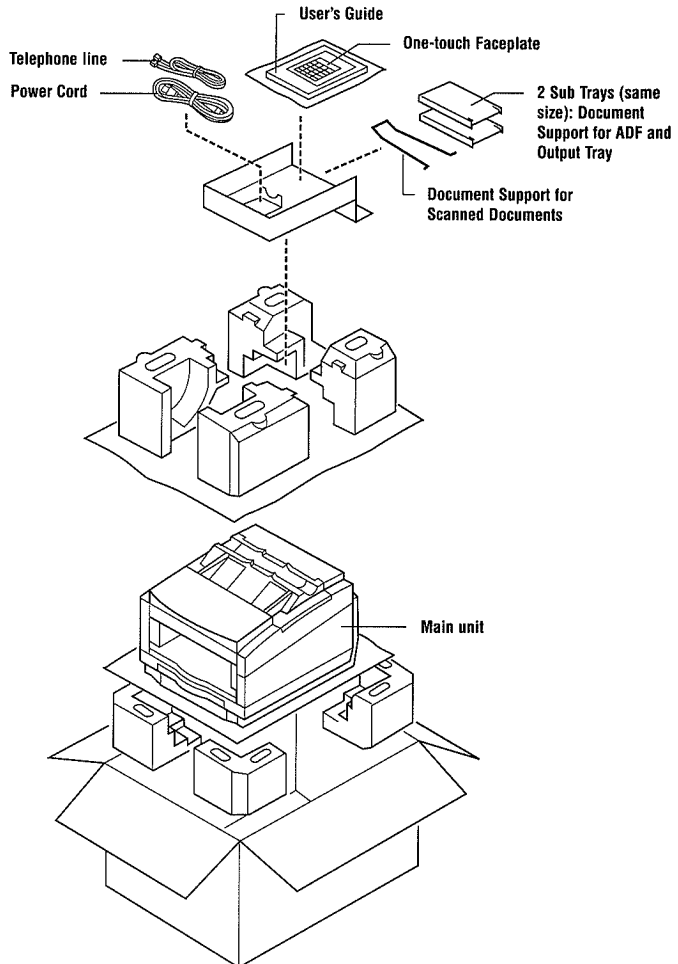
**2** Make sure you have the following items:

■ Hardware:
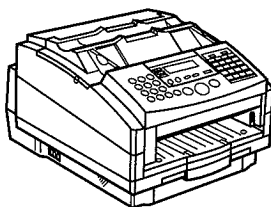
Main FAX-L300 with Paper Cassette
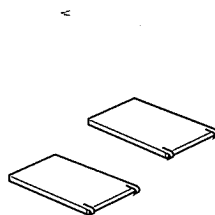
2 Sub Trays (same size)
- Output Tray
- Document Support for ADF
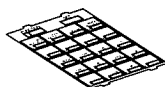
One-touch Faceplate

Document Support for
Scanned Documents
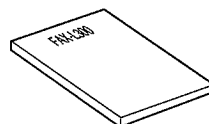
FAX-L300 User's Guide
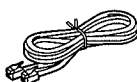
Telephone Line
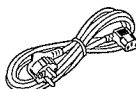
Power Cord
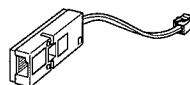
B.T. Adaptor (UK Only)

■ Miscellaneous:
- M label (UK only)

## Removing Shipping Materials

Before setting up your fax, be sure to remove all shipping materials as described below:

**1** Remove the shipping tapes from the printer door.
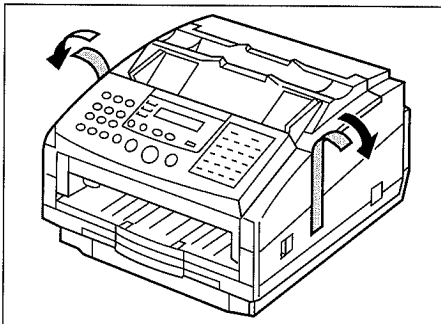
**2** Remove the protective sheet from inside the operation panel.
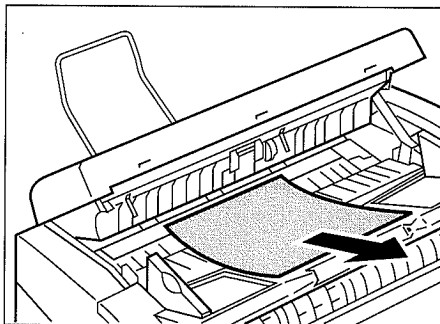
## Replaceable Parts

The only component of the fax that should need regular service or replacement is the FX3 toner cartridge.

Attach the following parts to your fax as explained below:

**Output Tray and Document Support for ADF**
Insert one tab first into the slot, then the other tab into the other slot. Make sure that the output tray and document support for ADF rest back.
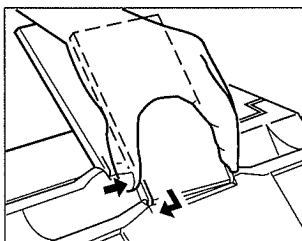
**One-Touch Faceplate**
Fit the tabs on the one-touch faceplate into the slots on the fax.
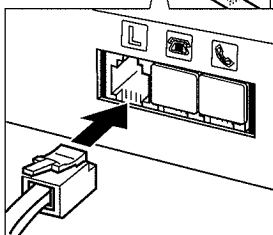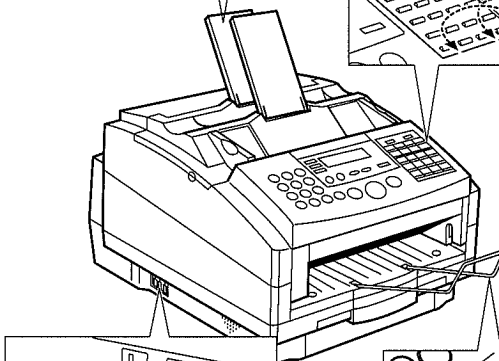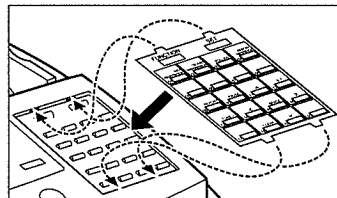
**Telephone Line**
Connect the telephone line to the input jack marked ⌊.
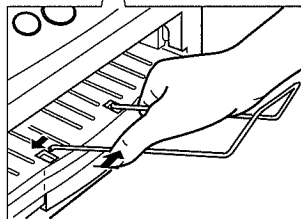
**Document Support for Scanned Documents**
Insert the ends of the document support into the slots on the fax. (→p. 2-26)

✔ See Appendix C "Options" for attaching the optional handset.

Now that you've assembled your fax, use the diagrams on the following pages to become familiar with its components and functions.

## From the Front

Output Tray

Document Support for ADF

Face-Down Delivery Slot

Paper Guides
Adjust to the width of the document.

Automatic Document Feeder (ADF)
Holds document pages to be scanned.

Printer Door

LCD Display
Displays messages and menu selections.

Operation Panel
Use the operation panel buttons to operate the fax unit.

Input Jacks

Telephone Line Jack

Handset Jack

Extension Phone Jack

Document Support for Scanned Documents
Holds document pages after they are scanned

Paper Cassette

Face-Up Delivery Slot

Speaker

Inner Cover

# From the Back

Rear Cover
Open to remove paper
when a paper jam
occurs.

Front Cover Release
Latch
Opens the front part
of the fax to remove
paper jams or to
select paper
delivery.

Power Connector

# The Handset (Option)

Ringer Volume Switch
Adjusts the volume of the ringer. There
are three settings: HIGH, LOW and
OFF. Use a pen or other pointed object
to adjust the switch.

# The Operation Panel



① **ALARM lamp**
Flashes when there is a paper jam, when the fax is out of paper or toner, when there is no cartridge installed, when the loaded paper size is incorrect, or when the printer door or front cover are open.

② **MEMORY lamp**
Lights when a document has been received in memory.

③ **IN USE lamp**
Lights when the telephone line is being used.

④ **R button {UK, ECG} I.P. {ECF}**
Press to dial an outside telephone number when the fax is connected through a switchboard (PBX).

⑤ **LCD Display**
Displays messages and prompts during operation. Displays selections, text, and names when registering information.

⑥ **FINE/STANDARD button**
Use to set resolution for the type of document you want to send.

⑦ **SPEAKER VOLUME switch**

Set the monitor volume of the speaker with this switch.

⑧ **One-Touch Speed Dial/Special Function buttons**

Use these buttons for One-Touch Speed Dialling and to perform special operations.

⑨ **Numeric buttons**

Use the numeric buttons to enter phone numbers when dialling. These buttons also enter text, numbers, and symbols when registering names and numbers.

⑩ **(REDIAL) button**

Press to dial the previous number dialled with numeric buttons.

⑪ **CODED DIAL button**

Press this button and then press a 2-digit number code under which you have previously registered a facsimile or telephone number for Coded Speed Dialling.

⑫ **(HOOK) button**

Press to dial with the numeric buttons when using manual sending.

⑬ **(START/COPY) button**

Press to start sending, receiving, copying, and other operations.

⑭ **ANS HOOK UP/MANUAL button**

When both lamps are off, the fax is set for automatic receiving. Press and light ANS HOOK UP when an answering machine is connected. Press and light MANUAL for manual document receiving.

⑮ **(STOP) button**

Press to cancel sending, receiving, or registering data, or to cancel any other operation.

FUNCTION lamp



- **FUNCTION button**
  Use to select special functions such as Data Registration and Polling. The FUNCTION lamp must be lit to select these functions.

- **SET button**
  Use to accept special function settings and activities.

  The following buttons perform special operations when the FUNCTION lamp is on:

- **DATA REGISTRATION button**
  Press to start data registration for facsimile numbers, names, and other important settings for sending, receiving and printing.

- **DELAYED TRANSMISSION button**
  Press to start registering a time for delayed sending.

- **POLLING button**
  Use for polling receiving.

- **MEMORY REFERENCE button**
  Use to delete or resend documents stored in memory, or print a document or a list of documents in memory or memory TX.

- **REPORT button**
  Use to print activity reports.

- **Search buttons (∧, ∨)**
  Use to scroll through selections during data registration.

- **Cursor buttons (<, >)**
  Use to move the cursor during data registration.

- **SPACE button**
  Press to enter a space between numbers or letters when you register facsimile numbers and names.

- **CLEAR button**
  Press during data registration to clear a number or name.

- **TONE/+ button**
  Press to use tone dialling, even if your fax is connected through a pulse dial telephone. Press also to enter a + in your facsimile number.

- **PAUSE button**
  Press to enter pauses between digits when dialling or registering facsimile numbers.

- **D.T. button**
  Press to confirm the dial tone when dialling a telephone number.

## Making Connections

Use the following instructions to connect phone lines to your fax.

### ■ Connecting the Telephone Line

**1** Connect the telephone line to the fax jack marked L.
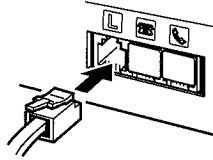
✔ Your telephone line must have an RJ11-C wall jack. Contact your telephone company if you need one installed.

### ■ Connecting a Telephone or Optional Handset

**1** If you wish to connect a telephone or optional handset to the fax, remove the cover of the jack marked 📞.
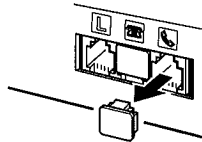
**2** Connect the end of the telephone or optional handset cord to the jack marked 📞.
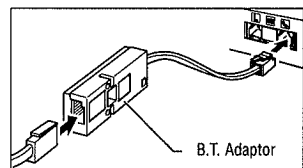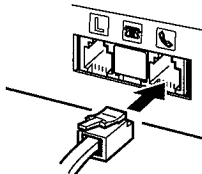
B.T. Adaptor

U.K. Only

- Users in the UK only
  When you connect a telephone or optional handset, be sure to connect the B.T. adaptor. Contact Canon UK concerning the B.T. adaptor.

## ■ Connecting an Extension Phone or Answering Machine

**1** To connect an extension phone or answering machine to the fax, remove the cover of the jack marked ☎.
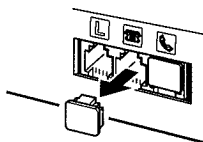
**2** Connect the end of the extension phone or answering machine cord to the jack marked ☎.
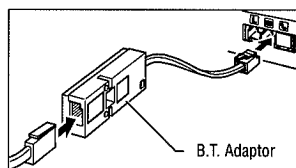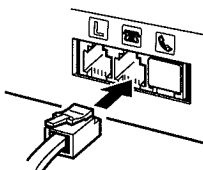
B.T. Adaptor

U.K. Only

- Users in the UK only
  When you connect an extension phone or answering machine, be sure to connect the B.T. adaptor. Contact Canon UK concerning the B.T. adaptor.

✔ If the connector does not fit the jack or does not seat properly, contact your local Canon authorised service representative or telephone company to have the correct connector installed.

# Powering Up

Once you finish setting up your fax, you are ready to power it up.

Follow these guidelines when connecting your fax to a power source:

- The fax unit is intended for domestic use only and requires 200–240 V AC. Do not use it outside the country where you purchased it.
- Use only the power cord that came with the unit. Using a longer cord or extension cord can cause the fax to malfunction.
- Unplug the unit by pulling on the plug itself, not on the cord.
- Do not plug the fax into a power outlet shared with an appliance that generates electrical noise, such as an air conditioner, computer, electric typewriter, or copier.
- Make sure nothing is laying on the power cord, and that the cord is located where it can not be walked on or tripped over.
- Do not overload the electrical outlet. Make sure that the total amperage used by all products plugged into the wall outlet does not exceed the ampere rating of the outlet's circuit breaker.

To connect the power cord, plug the cord into the power receptacle on the fax, and then into a 200–240 V AC power outlet.
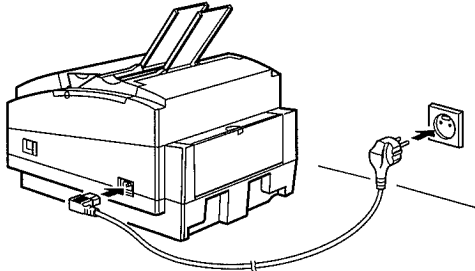


Before plugging in the fax, make sure there are no documents in the automatic document feeder (ADF).

- The fax has no power switch, so its power is on as soon as you plug it in. Once powered up, though, the unit still needs to warm up before you can use it.
- Depending on the number of pages accumulated in the fax memory, it can take up to four minutes for the unit to warm up.

While the fax is warming up, the following message appears in the LCD display:

```
PLEASE WAIT
```

The unit is warmed up and ready for use when the date appears in the LCD display:

```
23/07 '95 FRI 12:34
```

When connecting the fax for the first time, the date display alternates with the following message:

```
23/07 '95 FRI 12:34    →    INSTALL CARTRIDGE
```
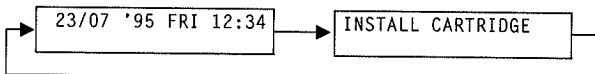
See "The Toner Cartridge" on the following pages for details on installing the toner cartridge.

# The Toner Cartridge

## Handling and Storing Cartridges
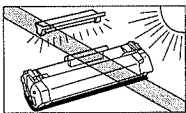
• Do not expose the cartridge to direct sunlight or bright light for longer than five minutes.
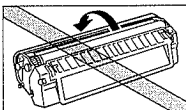
• Do not open the drum protective shutter on the cartridge. If the drum surface is exposed to light and damaged, print quality may deteriorate.
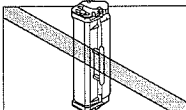
• Do not stand the cartridge on end, and do not turn it upside down. If toner becomes caked in the cartridge, it may prove impossible to free it even by shaking the cartridge.
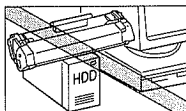
• Keep the cartridge away from computer screens, disk drives, and floppy disks. The magnet inside the cartridge may harm these items.
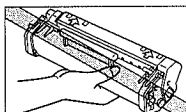
• Never touch the drum protective shutter. When holding the cartridge avoid touching the drum protective shutter with your hands.
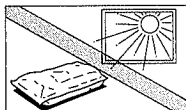
• Do not store the cartridge in direct sunlight.
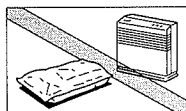
• Avoid locations subject to high temperature, high humidity, or rapid changes in temperature. Store the cartridge between 0° and 35°C.
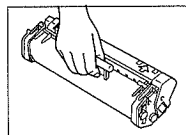
• Hold the cartridge as shown so that your hand is not touching the drum protective shutter.

• Store the cartridge in its protective bag. Do no open the bag until you are ready to install the cartridge in the fax.

• Save the protective bag. You may need to repack and transport the cartridge at a later date.

• Do not store the cartridge in salty air or where there are corrosive gases such as from aerosol sprays.

⚠ DO NOT PLACE THE CARTRIDGE IN FIRE. TONER POWDER IS FLAMMABLE.

## Installing/Replacing the Toner Cartridge

The fax uses a Canon FX3 toner cartridge. The procedure below explains how to install the cartridge when first using, and how to replace it when the toner runs out.

When the message REPLACE CARTRIDGE appears, the toner in the cartridge may simply be unevenly distributed. Before replacing the cartridge, follow the instructions on page 8-12 to evenly distribute the toner. If after doing this the message remains displayed or the print quality is low, replace the cartridge as described below.

If you try to install other cartridges, you may damage the fax.

**1** Remove any documents or printed pages from the fax.

**2** Make sure the unit is plugged in.

**3** Open the printer door by grasping it at both sides and lifting it up.
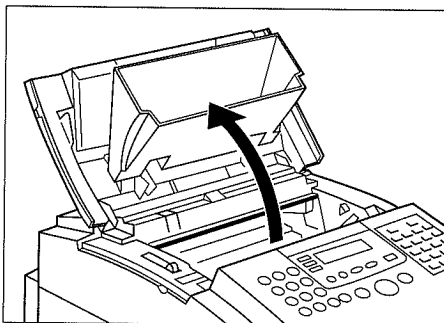
**4** If replacing a used cartridge, remove the old one as shown.
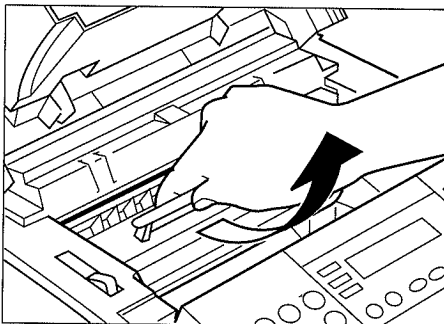
**5** Remove a new toner cartridge from its protective bag.

- Save the protective bag. You may need to repack and transport it in the future.

**6** Gently rock the cartridge from side to side five or six times.

- This evenly distributes the toner inside.



**7** Place the cartridge on a flat, clean surface, and steady it with one hand. Then remove the seal by gently pulling on the plastic tab with your other hand.

- Use a firm, even pull to remove the plastic seal. To avoid breaking the seal, do not jerk on it unevenly.





Side view

Pull in this direction

Top view

Pull in this direction
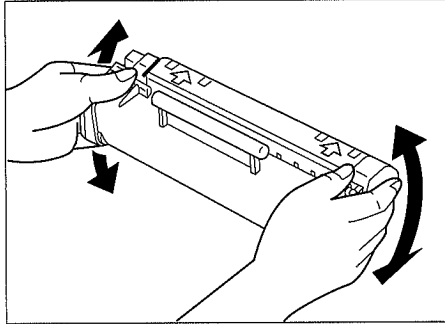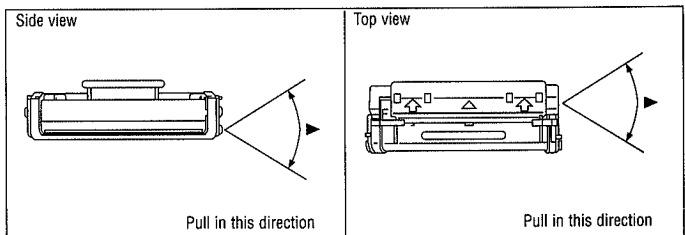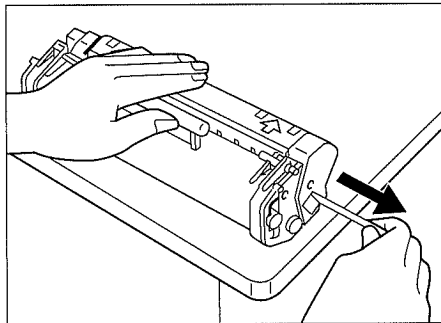
**8** Hold the cartridge by its handle and insert as follows:

- Make sure the round large tabs on the sides of the cartridge are aligned with the arrow marks (►, ◄) on the printer.
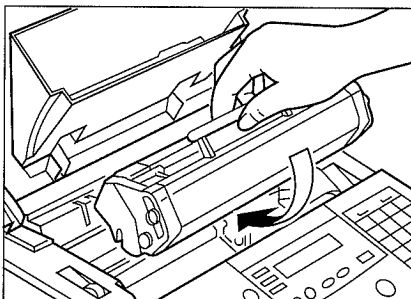
- Align the arrow marks on the cartridge (▲) with the arrow marks on the inside of the fax (▼).
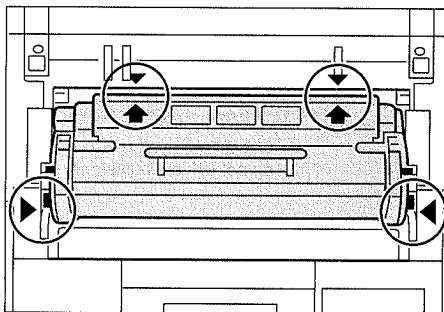
**9** Gently slide the cartridge down and back and *push firmly until it clicks into position.*

- Make sure the cartridge is set all the way into the unit. Otherwise the fax won't operate properly.
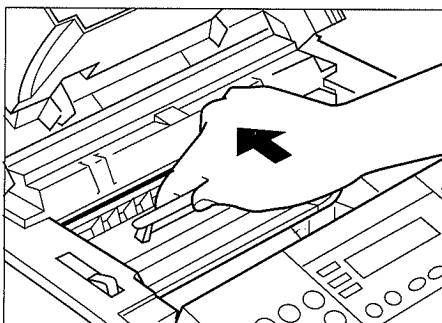
# 10 Gently close the printer door.
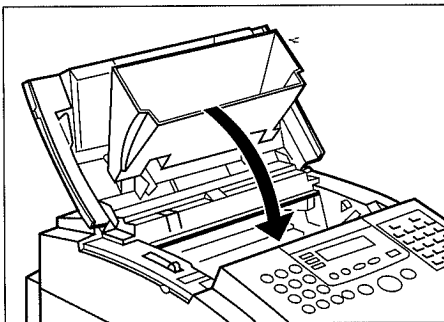
- Never leave the printer door open. Exposure to light can damage the drum surface.
- If you see CHECK PRT/FRNT COVRS in the display even after closing the printer door, the cartridge may not be installed properly. Try installing the cartridge again.
- If you see REPLACE CARTRIDGE in the display, the cartridge may not be installed properly even if the printer door closes completely. Try installing the cartridge again.
- After you have replaced the cartridge, make a copy of a document to check if the fax is printing properly. See p. 5-24, "Making Copies" for details on making a copy.

# Loading Recording Paper

When the message SUPPLY REC. PAPER appears in the display, you need to add paper to the paper cassette. Here are a few tips you should follow when you load paper into the paper cassette.

- Use A4-size paper.
- Use standard 60–90 g/m² weight paper.
- Do not use wrinkled or curled paper.

To keep the paper from curling, do not open paper packs until you are ready to use the paper. Store unused paper from opened packs in a cool, dry location in the original packaging.

- Let the paper run out before you refill the cassette. Avoid mixing new paper with paper remaining in the paper cassette.
- Stack the paper so the top and bottom edges and sides are straight and even before placing it in the paper cassette.

The paper cassette supplied with your fax holds up to 250 sheets of standard weight paper or a stack of 2.75 cm high.

To load paper in the paper cassette:

Do not load paper in the cassette when the fax is printing.

**1** Lift the paper cassette slightly and pull it out.
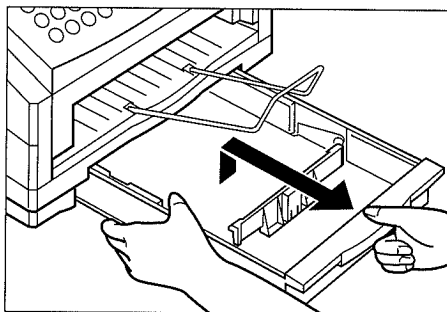
✔
- Remove the paper cassette being careful not to drop it as you pull it out.
- Filling the paper cassette without removing it completely from the fax may cause the paper to misfeed. Be sure to remove the paper cassette completely before loading paper.

**2** Before loading the paper, stack it so that the leading edge and sides of the paper are even.
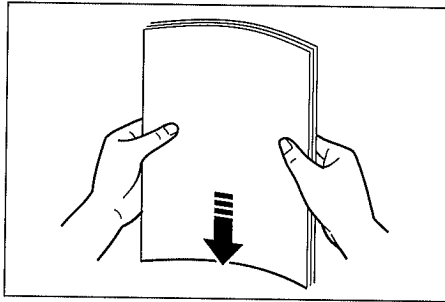
**3** Load the stack of paper into the paper cassette.

✔ • Make sure the paper stack is not higher than the limit marks (▼ ▼ ▼) on the sides of the cassette, and is under the tabs on the paper selector.
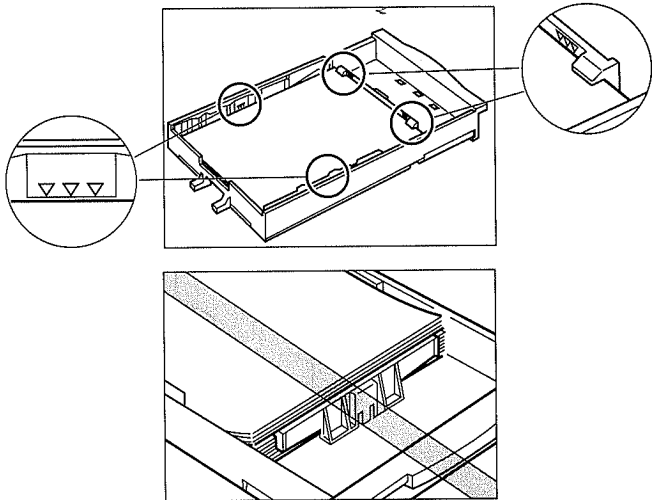
• Check all corners and edges of the paper stack to be sure they are flat and even.

• The cassette can hold about 250 sheets of paper (standard paper).

**4** Gently insert the paper cassette into the fax until it clicks into position.

• If the paper cassette is not installed correctly, the received document image might shift, or the recording paper might jam.
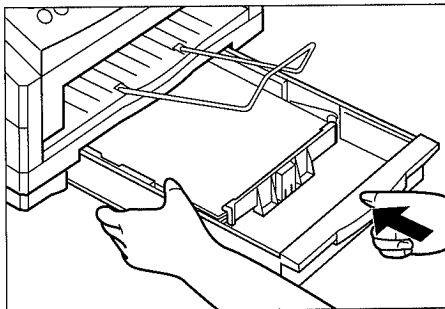
✔ • If you pull out the paper cassette with paper remaining in the cassette, be sure to check the following before reinserting it:

    — Make sure no paper is out of the cassette.
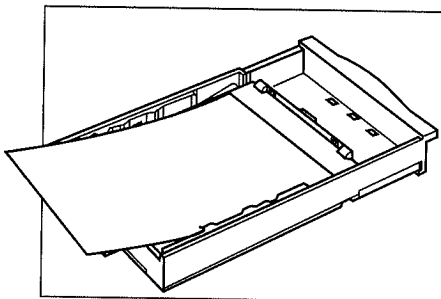


    — Make sure there is no loose paper inside the fax unit.

• If you wish to use the Letter or Legal size paper, please contact your authorised Canon Facsimile Service Dealer.

• If the paper cassette jams when you try inserting it in the fax, remove it from the fax and open the printer door. Then close it and try reinserting the paper cassette.

Received faxes or copies can be delivered through the face-up or face-down slots. Choose paper delivery according to the job the fax is performing.

**Face-Down Delivery** (Factory default setting)

Face-down delivery is used in most situations. The printed pages come out through the face-down delivery slot, and the pages are stacked in their correct order. The face-down delivery slot can hold up to about 60 sheets of standard paper.

**Face-Up Delivery**

Printed pages come out through the face-up delivery slot in reverse order. Since there is no limit in the number of pages that can be delivered, this setting is convenient when receiving a large number of faxes, when making many copies, or when you plan to be away from your office or home for a long period of time.

Remove the document support for scanned documents and place the fax machine on the edge of a table. This will allow the printed pages to come out without blocking the face-up delivery slot.
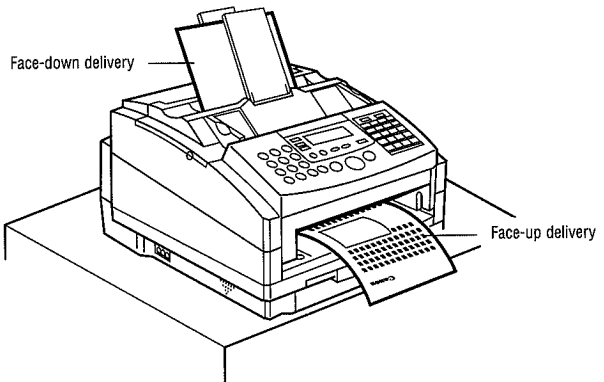


## Paper Delivery Selector

Follow the procedure below to select face-up or face-down delivery with the paper delivery selector:

**1** Remove any documents or printed paper from the fax.

**2** Use the front cover release latch to open the front cover.

Front cover release latch
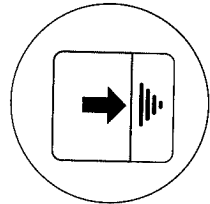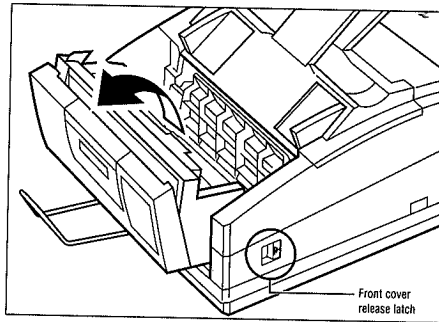
Front cover release latch

⚠ Do not open the front cover without pushing the release latch open as this may cause damage to your fax. Be sure to push the front cover release latch to open the front cover.
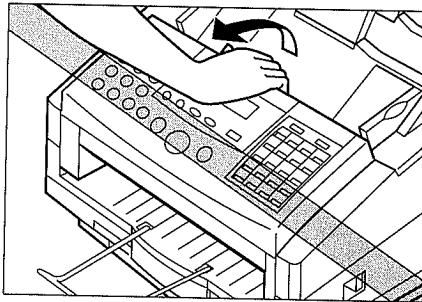
**3** Move the paper delivery selector down for face-up delivery (◀☐), or up for face-down (☐) delivery.
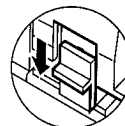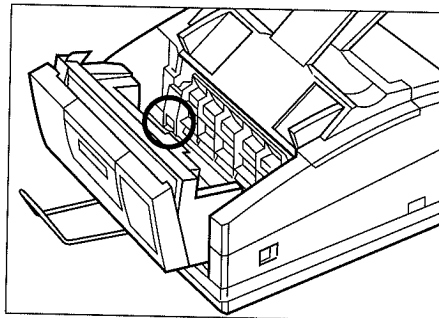
Face-up delivery (◀☐)
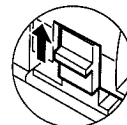
Face-down delivery (☐)

✔ If you select face-up delivery, be sure to remove the document support for scanned documents and to place the fax machine on the edge of a table. This will allow the printed pages to come out without blocking the face-up delivery slot.

**4** Gently close the front cover.

✔ When the face-down slot becomes full OUTPUT TRAY FULL is displayed. Faxes received after this message is displayed will be stored in memory.

# Storing Information in the Fax

This section describes how to store information in your FAX-L300. It includes:

■ Guidelines for Registering Information

- Entering numbers, letters, and symbols
- Editing your entry
- Using the One-Touch Speed Dial/Special Function buttons
- Using the menu system

■ Personalising Your Fax

- Identifying your documents
- Entering the date and time
- Registering your fax number and name
- Setting the telephone line type

## ■ Guidelines for Registering Information

Follow these guidelines when you enter information into the fax:

- If you pause and do not make an entry for more than 60 seconds, the fax returns to standby mode. You will then have to start entering the information all over again.

- If you make a mistake while making an entry, you can press **CLEAR** and repeat the entry, or press ⊚ **(STOP)** and start again.

### Entering Numbers, Letters, and Symbols

Use the numeric buttons to enter numbers, letters, and symbols.

| Button | Uppercase | Lowercase |
|--------|-----------|-----------|
| 1 | | |
| 2 | ABCÅÄÁÀÂÆÇ | abcåäáàâæç |
| 3 | DEFÐËÉÈÊ | defðëéèê |
| 4 | GHIÏÍÌÎ | ghiïíìî |
| 5 | JKL | jkl |
| 6 | MNOÑØÖÓÒÕÔ | mnoñøöóòõô |
| 7 | PQRS Þ | pqrs þ |
| 8 | TUVÜÚÙÛ | tuvüúùû |
| 9 | WXYZÝ | wxyzý |
| 0 | | |
| * | Uppercase ➤ Lowercase ➤ Number | |
| # | -.*#!",;: ^` _=/|'?$@%&+()[]{}<> | |

Each button contains a letter group; an upper case set, followed by a lower case set of characters. Every time you press, the character changes to the next one in the group.

To switch between number and letter mode, press *.

When you are in numeric mode, the number 1 appears in the upper right corner of the display:

```
UNIT NAME        :1
 _
```

When you are in letter mode, an A appears in the upper right corner:

```
UNIT NAME        :A
 _
```

Here is the general method of entering letters:

| ACTION | DISPLAY |
| --- | --- |

**1**    Make sure the unit is in letter mode (press * if not).

**2**    Press the button that contains the letter you want. Each button contains upper and lower case characters. When you press the button, the upper case version of the first letter appears in the display.

If you want to enter a space, press the **SPACE** (Special Function button).

**3**    Press the button repeatedly as needed until the letter you want appears in the display. Then press any other button to enter the letter.

For example, you would enter a lowercase letter k like this:

**1**    Press the * button until an a appears in the upper right corner and press the **5** button. The letter j appears in the display.

(5)

```
UNIT NAME        :a
       j
```

**2**    Press the **5** button once. The letter k appears in the display.

(5)

j → k

```
UNIT NAME        :a
       k
```

**3**    To enter the k, press the button of the next letter you want to enter, or press the right cursor ➤ (located in the One-Touch Dial buttons).

(2) (for example)

```
UNIT NAME        :a
      ka
```

To enter two letters from the same group, you have to use the right cursor button. For example, you would enter AA like this:

| ACTION | DISPLAY |
|---|---|

**1** Press **2** for the first A.

```
UNIT NAME      :A
   A
```

**2** Press the right cursor ➤ (located in the One-Touch Dial buttons) to enter the A and move the cursor one space to the right.

```
UNIT NAME      :A
   A_
```

**3** Press **2** for the second A.

```
UNIT NAME      :A
   AA
```

### Editing Your Entry

You can also correct characters you've already entered, as follows:

**1** Use the cursor buttons (◄ ➤) to move the cursor to the character you want to change.

**2** Enter the correct character or a space.

If you want to erase the entire entry and start over, press **CLEAR** (located in the One-Touch Speed Dial/Special Function buttons).

### Using the One-Touch Speed Dial/Special Function Buttons

The One-Touch Speed Dial/Special Function buttons allow you to use speed dialling and special functions such as delayed fax transmissions, printing reports, and polling. The **FUNCTION** button switches the buttons' functions between One-Touch Speed Dialling and Special Functions.
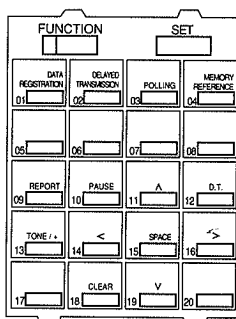
## Using the Menu System

The fax includes a menu system that you use to select fax, telephone, and printer operations, and to enter user information. The system includes these seven items:

- **SPEED DIAL SETUP**
  Lets you register numbers for One-Touch Speed Dialling, Coded Speed Dialling and Group Dialling.

- **USER SETTINGS**
  Lets you enter the information that prints on the faxes you send, to set scanning contrast, and to enter other basic data. Enter these settings when you plug your fax in for the first time; you will rarely need to change them thereafter.

- **REPORT SETTINGS**
  Lets you set the fax to print a report every time you send or receive a fax, and also contains options for printing summary reports.

- **SEND (TX) SETUP**
  Contains items that let you customize how your fax sends documents.

- **RECEIVE (RX) SETUP**
  Allows you to customize how your fax receives documents.

- **FAX PRINTER SETUP**
  Lets you customize how your unit prints documents.

- **SYSTEM SETTINGS**
  Allows you to set the date format, transmission and receive speed, etc.

For details, see Appendix A, "The Menu System."

You'll use the Special Function buttons to display and select items from the menu system, as follows:

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION  DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to change the menu display.

∧   ∨

- Press ∨ to display the next item in the menu. (The list will wrap from the last item in the list back to the first.)
- Press ∧ to display the previous item in the menu. (The list will wrap from the first item in the list back to the last.)

**3** Press **SET** to select an item from the menu, or press **STOP** to cancel the menu selection and return to standby mode.

SET  or

```
23/07 '95 FRI 12:34
```

# ■ Personalising Your Fax

## Identifying Your Documents

When sending documents, you can have your fax number, your name, and the current date and time printed out by the receiving fax. This information is called your TTI (Transmit Terminal Identification) and appears at the top of the faxed document in small type.

By identifying the documents you send, the receiving party can recognise your fax messages at a glance. Here is a sample document with the identifying information:

The date and time you sent the document | Your Fax/ Telephone number | Your name or company name | The name of the party who is receiving the document | The page number



```
20/02  '98 TUE 05:54 FAX 31 20 545 8264    CANON EUROPA    ···· CANON-TEST    ▨001
```

### THE SLEREXE COMPANY LIMITED

SAPORS LANE - BOOLE - DORSET - BH 25 8 ER

TELEPHONE BOOLE (945 13) 51617 - TELEX 123456

Our Ref. 350/PJC/EAC                          18th January, 1972.

Dr. P.N. Cundall,
Mining Surveys Ltd.,
Holroyd Road,
Reading,
Berks.

Dear Pete,

         Permit me to introduce you to the facility of facsimile
transmission.

         In facsimile a photocell is caused to perform a raster scan over
the subject copy.  The variations of print density on the document
cause the photocell to generate an analogous electrical video signal.
This signal is used to modulate a carrier, which is transmitted to a
remote destination over a radio or cable communications link.

         At the remote terminal, demodulation reconstructs the video
signal, which is used to modulate the density of print produced by a
printing device.  This device is scanning in a raster scan synchronised
with that at the transmitting terminal.  As a result, a facsimile
copy of the subject document is produced.

         Probably you have uses for this facility in your organisation.

         Yours sincerely,

         *Phil.*

         P.J. CROSS
         Group Leader - Facsimile Research

The top line also includes the name of the receiving party when you send the document using One-Touch Speed Dialling, Coded Speed Dialling, or Group Dialling (if you registered it).

---
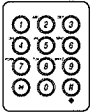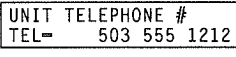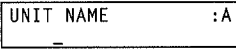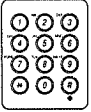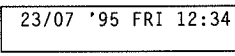
## Entering the Date and Time

Use the following procedure to enter the specific information included on every fax you send:

**ACTION**                                                    **DISPLAY**

**1**

FUNCTION    DATA REGISTRATION    V    SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Press **SET** and use the numeric buttons to enter the correct date and time. Use the 24-hour system for the time (5:20 p.m. would be 17:20, for example).

SET    Ex: ② ③ ⓪ ⑦ ⑨ ⑤
       ① ② ③ ④

```
DATE & TIME
23/07 '95 FRI 12:34
```

**3** Press **SET** to save the date and time, then press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 12:34
```

## Registering Your Fax Number and Name

**ACTION** **DISPLAY**

**1**

FUNCTION | DATA REGISTRATION | ∨ | SET

```
USER SETTINGS
1.DATE & TIME
```

**2**  Use the search buttons to display 2. UNIT TELEPHONE #.

∧  ∨

```
USER SETTINGS
2.UNIT TELEPHONE #
```

**3**  Press **SET** and enter your fax number—up to 20 digits—using the numeric buttons.

SET   Ex: ⑤ ⓪ ③ SPACE
       ⑤ ⑤ ⑤ SPACE
       ① ② ① ②

```
UNIT TELEPHONE #
TEL⁼   503 555 1212
```

**4**  Press **SET** to save the fax number, then press **SET** again to display 3. UNIT NAME.

SET   SET

```
USER SETTINGS
3.UNIT NAME
```

```
UNIT NAME      :A
_
```

**5**  Enter your name or your company name—up to 24 characters—using the numeric buttons. (→p. 2-29)

Ex: CANON INC

```
UNIT NAME      :A
CANON INC
```

**6**  Press **SET** to save the name, then press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 12:34
```

## Setting the Telephone Line Type

The FAX-L300 is factory set to work with rotary pulse {EC} touch tone {UK} telephone lines. If you have a touch tone {EC} rotary pulse {UK} line, you will need to change the telephone line setting. Follow the procedure below:

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION   DATA REGISTRATION   V   SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Use the search buttons to display 10. TEL LINE TYPE.

Λ   V

```
USER SETTINGS
10.TEL LINE TYPE
```

**3** Press **SET**, then use the search buttons to select TOUCH TONE {EC} ROTARY PULSE {UK}.

SET   Λ   V

{EC}
```
TEL LINE TYPE
         TOUCH TONE
```

{UK}
```
TEL LINE TYPE
        ROTARY PULSE
```

**4** Press **SET** to save your selection, and press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 12:34
```

# Sending Faxes

Now that you have installed and set up your Canon FAX-L300, you are ready to begin sending faxes.

This section describes how to enter the user information, the types of documents you can fax, two ways of sending faxes, and how to improve the appearance of your faxes.

Before sending a fax, make sure your document meets the fax's paper size, weight, and thickness requirements listed below.

| Weight | |
| --- | --- |
| One-page document | 34.7 – 240 g/m² |
| Multipage document | 50 – 90 g/m² |
| Width | |
| Paper | 146.5 – 259 mm |
| Scanning | 208 mm |
| Length | 103.5 – 366 mm |
| Thickness | |
| One-page document | 0.06 – 0.3 mm |
| Multipage document | 0.07 – 0.13 mm |

To prevent paper jams in the automatic document feeder (ADF), make sure not to use any of the following with the fax:
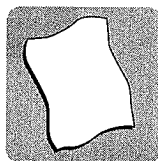
Wrinkled or creased paper
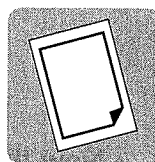
Carbon or carbon back paper
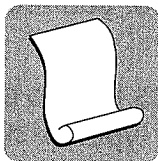
Curled paper
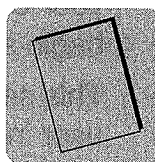
Coated paper
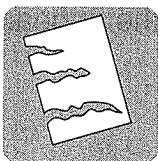
Torn paper
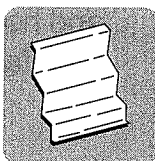
Onion skin or very thin paper

The scanned document may not be delivered properly onto the output tray (document support for scanned documents) if the paper of your document is thin. In this case, contact your Canon Facsimile Dealer.

## Scanning Area

Also, make sure your document's text and graphics do not extend all the way to the edge of the page. The white area in the illustration below shows the area the fax can scan on an A4-size page.

Max. 4 mm

Max. 3 mm

Max. 3 mm

Max. 4 mm
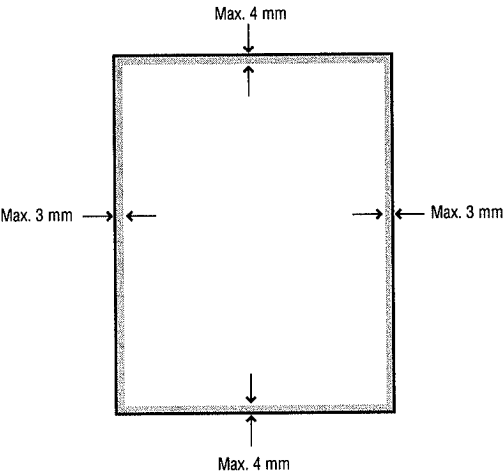
## Preparing the Document

- Remove all paper clips, staples, tape, etc. from the document.
- Let any wet ink, correction fluid, or paste dry completely.
- Make sure all pages are the same size and type.

## Loading the Document

The fax can hold up to 30 A4-size, letter-size or 20 legal-size pages at a time. If your document is longer than this, you can add more pages to the automatic document feeder (ADF) while the fax is being sent (see "Adding Pages During Transmission" later in this section).

**1** Slide the paper guides to fit the width of the document.
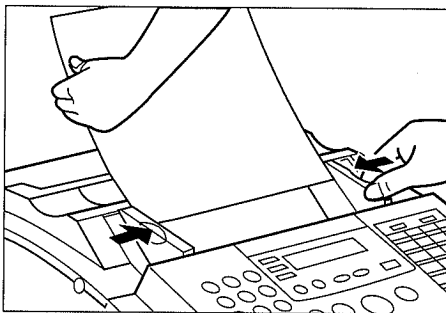
**2** Place the document face down on the fax, and gently insert the document into the automatic document feeder (ADF) until it stops.
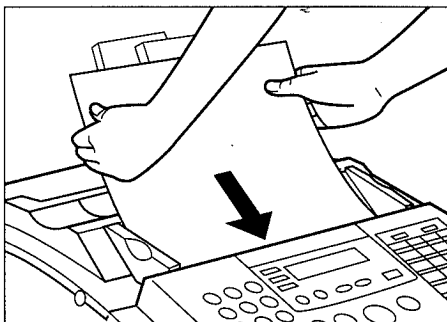
- If you are experiencing difficulty feeding multipage documents, remove the stack and tap it on a flat surface to even the edges.
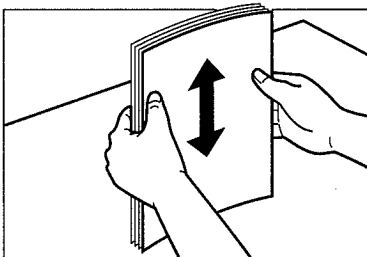
Then insert it into the automatic document feeder (ADF) until it stops.
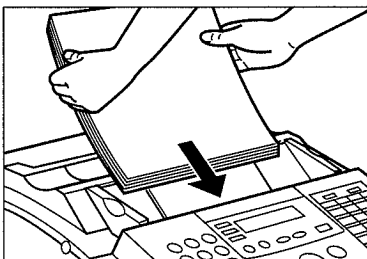
You are now ready to send the fax as described on the following pages.

# Two Ways to Send a Fax

The fax provides two ways of sending faxes: Memory Sending and Manual Sending.

## Memory Sending

Memory Sending scans your document into the fax's memory. As soon as it starts scanning if the telephone line is free, the unit will call the other party and will start to transmit the information even as the remaining pages are being scanned.

Memory Sending allows you to load faxes into memory while the fax performs other tasks, such as transmitting a fax. It also lets you send to numbers that are often busy (it automatically redials), or to send to more than one fax number.

**1**

Load the document into the automatic document feeder (ADF) as described previously.

**2**

Dial the fax number you're sending to.

Use the numeric buttons, One-Touch Speed Dialling, or Coded Speed Dialling to enter the number.
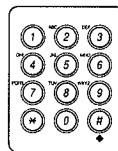
## Manual Sending

Manual Sending dials the number, makes the connection, and sends the fax immediately. It also lets you talk to the other party before sending the document. This is useful when the other party uses a single phone line for both voice and fax transmissions. You must use the handset for Manual Sending.

**1**

Load the document into the automatic document feeder (ADF) as described previously.

**2**

Press **HOOK**. This activates the speaker (you should hear the dial tone) and lights the IN USE lamp.

## 3

Check the display to make sure the number is correct. If not, press ⊘ (STOP) and begin again.

```
TEL=  1 503 555 1212
```

## 4

Send the fax by pressing START/COPY.

As the document is scanned into memory, a transaction number appears in the display: this number identifies the document and can be used to delete it from memory (see "Deleting a Stored Fax from Memory" in Part 5 for details).

## 3

Dial the fax number you're sending to.
Use the numeric buttons, One-Touch Speed Dialling, or Coded Speed Dialling to enter the number. If you make a mistake, press ⊘ (STOP) and start again from step 2.

## 4

When you hear the other party answer, pick up the handset and tell them to get ready to receive a fax by pressing the start button on their fax machine. (You will hear a fax sound over the handset when they do this.)

## 5

Press START/COPY and hang up. The fax begins sending your document.

# Adding Pages During Transmission

Wait until the last page starts to feed into the fax. When all but about 2.5 cm of the last page is scanned, place the new page on top of the last page and gently feed it in.

# Cancelling a Transmission

| ACTION | DISPLAY |
|---|---|

**1** Press **STOP**.

- If you're using memory sending, this message shown below appears. Go to step 2.

```
CANCEL DURING TX/RX?
YES=(*) NO=(#)
```

- If you're using manual sending, the transmission is cancelled immediately.

**2** Press * to cancel the transmission, or press # to complete the transmission.

If you press the ⊘ **(STOP)** button while the fax is waiting to redial, the display will be deleted, but the transmission will not be cancelled. Follow the procedure on page 5-20, "Deleting a Stored Fax from Memory" to cancel the transmission.

# Messages Displayed During Sending

When the fax sends a document, the following messages are displayed. These messages allow you to see the progress of the transmission and know when it has been completed.

## Messages during memory sending

Message displayed when the fax is scanning document to be sent.

```
                        | Transaction No.
                        |
TRANSMIT        0040
SCANNING DOC.  P.001
                        | Page No.
```

During transmission, the following are displayed alternately:

- Condition (CALLING, TRANSMIT, etc.)
- Dialled number
- Other party's name
- Transmission mode (G3)
- ECM TX (in ECM)
- TX/RX No.
- Page No.

When the document has been transmitted, the following are displayed for about ten seconds before the fax returns to standby mode:

- Transmission result (TRANSMITTING OK or an error message)
- TX/RX No.

The fax will print a transmission report (TX Report) if it has been set to do so. (→p. 6-4, A-5)

# Redialling

## Manual Redial

To redial the last number dialled with the numeric buttons, press the ⬤ (REDIAL) button.
To cancel manual redialling, simply press the ⊘ (STOP) button.

## Auto Redial (in Memory Sending)

If the line is busy or there is no answer, the fax waits two minutes and then dials the same number.

When the fax is waiting to redial, the following messages are displayed:

Transaction No.

```
23/07 '95 FRI 12:34       23/07 '95 FRI 12:34
AUTO REDIAL               TX/RX NO.      0040
```
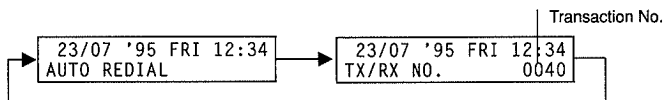
These messages are displayed once the fax has redialled the number and is calling:

Telephone No.

```
23/07 '95 FRI 12:34       23/07 '95 FRI 12:34
CALLING                            5035551212
```
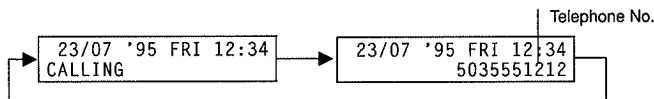
Auto redialling occurs even if the fax's memory becomes full when the document is being scanned. In this case, the following messages are displayed:

Transaction No.

```
MEMORY FULL               AUTO REDIAL    0040
PLEASE WAIT               SCANNING DOC.  P.007
```

Page No.
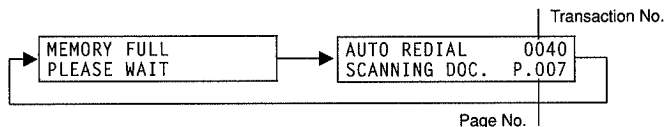
If after two attempts the line is still busy or there is no answer, the fax stops redialling, sending stops, and an activity report is printed to remind you that the transmission was not completed.

## Cancelling Auto Redialling

Auto redialling can not be cancelled with the ⊘ (STOP) button while the fax is waiting to redial. To cancel, do one of the following:

• Wait until dialling begins and then press the ⊘ (STOP) button.

• Delete the document from memory. See page 5-20, "Deleting a Stored Fax from Memory" for details.

✔ The default settings for the auto redial feature are:

• Redials two times.
• Waits two minutes before redialling.
• If an error occurs during transmission, the fax resends the first page of the document and the error page.
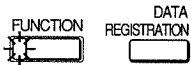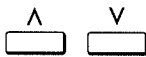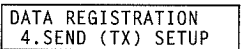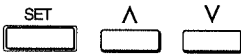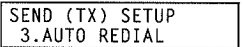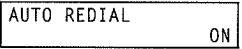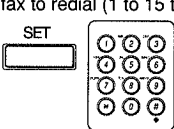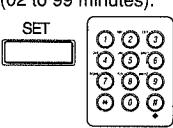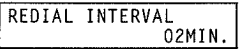
You can change these settings by following the procedure on the next page.

## Setting Up Redialling

You can set up the following for automatic redialling:

- The number of times the fax attempts redialling
- The time interval between redialling attempts
- How the fax handles redialling when a transmission error occurs

Follow the procedure below to adjust these settings.

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION  DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 4. SEND (TX) SETUP.

∧  ∨

```
DATA REGISTRATION
4.SEND (TX) SETUP
```

**3** Press **SET**, then use the search buttons to display 3. AUTO REDIAL.

SET  ∧  ∨

```
SEND (TX) SETUP
3.AUTO REDIAL
```

**4** Press **SET**, then use the search buttons to display ON.

SET  ∧  ∨

```
AUTO REDIAL
           ON
```

**5** Press **SET**, then use the numeric buttons to enter the number of times you want the fax to redial (1 to 15 times*).

SET

```
REDIAL TIMES
         02TIMES
```

\* Up to 3 times in the UK.

**6** Press **SET**, then use the numeric buttons to enter the time interval during rediallings (02 to 99 minutes).

SET

```
REDIAL INTERVAL
          02MIN.
```

**7** Press **SET**, then use the search buttons to select whether or not the fax redials when a transmission error occurs.

SET ∧ ∨

Select ON to redial when a transmission error occurs.

```
TX ERROR RESEND
                   ON
```

Select OFF to cancel redialling when a transmission error occurs.

```
TX ERROR RESEND
                  OFF
```

**8** Press **SET**, then if you selected ON in step 7, use the search buttons to select which pages are sent when an error occurs.

Resends the first page of the document and the pages after the error occurred.

```
RESEND TX FROM
        ERROR & 1ST PG
```

Resends only the pages after the error occurred.

```
RESEND TX FROM
          ERROR PAGE
```

Resends all the document pages.

```
RESEND TX FROM
           ALL PAGES
```

**9** Press **SET** to save your selection, then **STOP** to return to standby.

SET

```
23/07 '95 FRI 12:34
```

Canon's Ultra High Quality (UHQ) and auto-halftone imaging technology allows you to send and receive faxes that have print quality very close to that of the originals.

## Resolution

The fax has two resolutions:

■ STANDARD

This is the best setting for normal printed or typewritten text. It allows the fastest document transmission. To use it, press the resolution button (below the FINE and STANDARD indicator lamps) until the STANDARD lamp lights.

■ FINE

Fine provides twice the resolution of Standard, and is a good setting for documents with small text. To use it, press the resolution button until the FINE lamp lights.
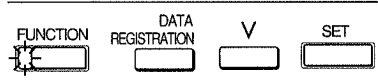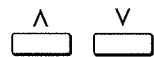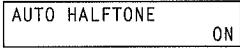
✔ When making copies, the fax automatically adjusts to FINE.

## Auto Halftone

This setting tells the fax whether the fax includes halftone images, or is composed only of black text on a white background.

When Auto Halftone is ON the fax automatically adjusts to accurately reproduce documents that contain halftone images (such as photographs). Set to OFF when you send faxes containing only black text on a white background.

To change the Auto Halftone setting:

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION / DATA REGISTRATION / ∨ / SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Use the search buttons to display 5. AUTO HALFTONE.

∧ ∨

```
USER SETTINGS
5.AUTO HALFTONE
```

**3** Press **SET** to display the current type of document setting.

SET

```
AUTO HALFTONE
            ON
```

**4** Use the search buttons to display the setting you want.

∧ ∨

You can cancel the procedure by pressing ⊘ (STOP) any time before pressing SET in step 5. This returns the fax to standby mode without saving the changes.

**5** Press SET to save your selection, and press STOP to return to standby mode.

SET
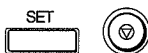
| 23/07 '95 FRI 12:34 |

✔ When making copies, the fax automatically adjusts to Auto Halftone ON.

## Scanning Contrast

The fax can send faxes using any of three contrast settings: Dark, Standard, and Light. STANDARD is the default, and is fine for most documents. If the print on your document is very light, use DARKER; if the print is dark, use LIGHTER.

To change the Scanning Contrast setting:

**ACTION**                          **DISPLAY**

**1**

FUNCTION   DATA REGISTRATION   ∨   SET
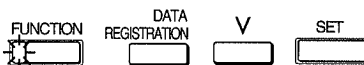
| USER SETTINGS<br>1.DATE & TIME |

**2** Use the search buttons to display 6. SCANNING CONTRAST.

∧ ∨

| USER SETTINGS<br>6.SCANNING CONTRAST |

**3** Press SET to display the current scanning contrast setting.

SET

| SCANNING CONTRAST<br>STANDARD |

**4** Use the search buttons to display the scanning contrast you want.

∧ ∨

You can cancel and return to standby mode by pressing ⊘ (STOP) any time before pressing SET in step 5.

**5** Press SET to save your selection, and press STOP to return to standby mode.

SET

| 23/07 '95 FRI 12:34 |

# Receiving Faxes

This chapter describes how to set up the
Canon FAX-L300 to receive faxes in a
way that best suits your needs.

## Three Ways to Receive a Fax

The fax can receive documents by any of three methods, each of which can be further customized to suit your needs.

■ **Automatic receiving**

Use automatic receiving when you want your fax to automatically receive faxes without any intervention from you. In this mode, the fax automatically receives calls from fax machines, and can ring or not (as you select) if it receives a telephone call.

■ **Answering machine receiving**

Use this mode if you have a combined fax/phone line with an answering machine, and want to leave it unattended. When your answering machine is set to answer, this mode receives fax calls, and routes telephone calls to the answering machine.

■ **Manual receiving**

For manual receiving, you need to have the optional handset installed or an extension telephone connected.
Use manual receiving when you want to answer every call yourself. In this mode the fax rings for every incoming call, whether from a fax machine or a telephone. You can also use extension telephones with this mode.

## How to Set the Receiving Mode

The fax is set for automatic receiving when you first plug it in. You can change to either of the other two receiving modes by pressing the button below the ANS HOOK UP and MANUAL indicator lamps: the lamps show which mode is active.

■ If both lamps are off, the fax is set for automatic receiving. To adjust the automatic receiving options, turn to "Automatic Receiving Options," below.

■ If the MANUAL lamp is on, the fax is set for manual receiving. For more information on manual receiving, see "Manual Receiving," below.

■ If the ANS HOOK UP lamp is on, the fax is set for answering machine receiving. See "Using the Fax with an Answering Machine" below for more information.

✔ Answering machine receiving mode will not work properly if you do not have an answering machine hooked up to your fax.

## Automatic Receiving Options

The fax's automatic receiving mode can operate two ways:

■ Fax-only receiving

Fax-only receiving answers all calls, but accepts only those from fax machines and disconnects all others. (This is the default setting.)

■ Fax/telephone auto-switch receiving

Use fax/telephone auto-switch receiving when you have a combined fax/telephone line. If the call is from a fax, your fax receives the document transmission without ringing. If the call is from a telephone, your fax rings to alert you to pick up the handset to answer the call.

You can choose one of these automatic receiving options as follows:

**ACTION**                                    **DISPLAY**

**1**  FUNCTION   DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2**  Use the search buttons to display 5. RECEIVE (RX) SETUP.

∧   ∨

```
DATA REGISTRATION
5.RECEIVE(RX) SETUP
```

**3**  Press **SET**, then use the search buttons to display 2. RX MODE.

SET   ∧   ∨

```
RECEIVE (RX) SETUP
2.RX MODE
```

**4**  Press **SET**, then use the search buttons to display the receiving mode you want.

SET   ∧   ∨

• Fax only receiving–AUTO FAX RX:

```
RX MODE
       AUTO FAX RX
```

• Fax/telephone auto-switch receiving–FAX/TEL AUTO SW:

```
RX MODE
       FAX/TEL AUTO SW
```

**5**  Press **SET** to set additional options, or press **STOP** to return to standby mode. See "Setting Up Fax/Telephone Auto-Switch Receiving" below for details.

SET   or  ⊚

## Setting Up Fax/Telephone Auto-Switch Receiving

When you select the FAX/TEL AUTO SW, you can also set these options.

- F/T RING TIME

    When your fax is set to receive both fax and telephone calls automatically, it rings to alert you to pick up the handset if the call is from a person. If you do not pick up the handset within a certain amount of time, the fax stops ringing. Use this option to change the time from 10 to 45 seconds. The default is 15.

- F/T SWITCH ACTION

    Not all fax machines are capable of sending a FAX TONE (the CNG tone that warns the receiving fax machine that a fax is coming). For those cases the fax may think that the call coming in is a voice call and rings to alert you of the call (the amount of time it is going to ring is determined by the F/T Ring Time setting above). If you do not answer the call, one of two things can happen:

    1. If you set the F/T SWITCH ACTION to RECEIVE, the fax will switch to fax receive mode automatically at that point and start to receive the document. If no document comes in, it disconnects the call after approximately 35 seconds. The factory programmed default is RECEIVE.
    2. If you set the F/T SWITCH ACTION to DISCONNECT, the fax will disconnect the phone call immediately freeing up your phone line at this point.

- OUTGOING MESSAGE

    The outgoing message feature allows you to send an electronic voice message to the other party's fax when you receive a call: *"You are connected. Please hold."*
    With a choice of 12 languages, you can select two languages if you want to send the message in two languages. Your choices for the message are: English, French, Spanish, German, Italian, Dutch, Finnish, Portuguese, Norwegian, Swedish, Danish and Greek.

    \* Users in the UK and Switzerland can not set the outgoing message to OFF.

## What Happens When the FAX/TEL AUTO SW is Selected

| Telephone | Fax | Fax |
|---|---|---|
| | Sending document manually | Sending document automatically |

Telephone charges begin for caller. — Fax answers without ringing.

**OUTGOING MESSAGE***
"You are connected. Please hold."

Fax listens for FAX TONE

Document received automatically.

(FAX TONE is detected and the fax switches to receive mode.)

FAX TONE is not detected

Fax starts ringing

Pick up the handset to talk.

**F/T RING TIME**
(Factory setting=15 sec.)

If you don't pick up the handset (within 15 seconds)

**F/T SW ACTION**
Choose between:
Receive (factory setting) and Disconnect

**DISCONNECT**

The fax disconnects the call.

**RECEIVE**
(Factory setting)

Not all fax machines are capable of sending a FAX TONE. For those cases if you set the F/T SW ACTION to RECEIVE, the fax switches to receive mode automatically and starts receiving the document. If no document comes in it disconnects after approximately 35 seconds.

* When you set the outgoing message to ON. (Users in the UK and Switzerland can not set the outgoing message to OFF.)

You select these options in the RX MODE submenu of the RECEIVE (RX) SETUP menu when the FAX/TEL AUTO SW is selected. See below to change the settings.

Set these options as follows:

| ACTION | DISPLAY |
|---|---|

**1**

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 5. RECEIVE (RX) SETUP.

```
DATA REGISTRATION
5.RECEIVE(RX) SETUP
```

**3** Press **SET**, then use the search buttons to display 2. RX MODE.

```
RECEIVE (RX) SETUP
2.RX MODE
```

**4** Press **SET**, then use the search buttons to display FAX/TEL AUTO SW.

```
RX MODE
      FAX/TEL AUTO SW
```

**5** Press **SET**, then use the search buttons to display 1. F/T RING TIME: this is how many seconds the fax rings while waiting for someone to pick up the handset.

```
FAX/TEL AUTO SW
1.F/T RING TIME
```

**6** Press **SET**, then use the numeric buttons to enter a time from 10 to 45 seconds.

Ex: (0)(1)(5)

```
F/T RING TIME
            015SEC
```

**7** Press **SET**, then use the search buttons to display 2. F/T SWITCH ACTION: this tells the fax what to do if no one picks up the handset within the specified ring time.

```
FAX/TEL AUTO SW
2.F/T SWITCH ACTION
```

**8** Press **SET**, then use the search buttons to display the setting you want.

● Choose RECEIVE to receive the call:

```
F/T SWITCH ACTION
          RECEIVE
```

● Choose DISCONNECT to disconnect the call:

```
F/T SWITCH ACTION
        DISCONNECT
```

**9** Press **SET**, then use the search buttons to display 3. OUTGOING MESSAGE.

SET ∧ ∨

```
FAX/TEL AUTO SW
3.OUTGOING MESSAGE
```

- This allows you to send an electronic voice message to the other party's fax when you receive a call: "You are connected. Please hold."
- * Users in the UK and Switzerland can not set the outgoing message to off. After completing this step, go to step 11.

**10** Press **SET**, then use the search buttons to display ON.

SET ∧ ∨

```
OUTGOING MESSAGE
ON
```

**11** Press **SET**, then use the search buttons to select the first language of the message.

SET ∧ ∨

```
OGM 1
GERMAN
```

- With a choice of 12 languages, you can select one or two languages for the message. Your choices are: English, French, Spanish, German, Italian, Dutch, Finnish, Portuguese, Norwegian, Swedish, Danish, and Greek.

**12** Press **SET**. If you want to select a second language for the message, use the search buttons to select it.

SET ∧ ∨

```
OGM 2
ITALIAN
```

**13** Press **SET**, then press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 12:34
```

## Manual Receiving

For manual receiving, you need to have the optional handset installed or an extension telephone connected.

When the fax is set for manual receiving, it rings every time it receives a call, whether the call is from a telephone or a fax machine.

When the optional handset or extension telephone rings:

**1** Pick up the handset:

- If you hear a slow, high-pitched beep, you are receiving a fax call. Go to the next step.
- If you hear someone on the line, you are receiving a regular phone call. If the caller later wants to send a fax, go to step 2 when you hear the slow beep.

**2** Optional handset:    Press ◇ **(START/COPY)** on the operation panel to start receiving the fax.

Extension telephone:    Enter 25 using the telephone's keypad. This is the remote receiving ID.

- While the fax is coming in, the display shows a transaction number (a unique number used to identify the fax) and the sender's name. See "Messages Displayed While Receiving a Fax" below, and "Display Messages and Meanings" in Part 8.
- See Appendix A, "The Menu System" for instructions on how to change the remote receiving ID or turn it off. (→p. A-9)

**3** Replace the handset in its cradle.

If the fax's handset is not properly seated, the off-hook alarm will sound and the fax will not be received. The alarm stops when the handset is placed correctly in its cradle.

# Using the Fax with an Answering Machine

**1** Press the **ANS HOOK UP/MANUAL** button until the ANS HOOK UP lamp goes on.

ANS HOOK UP ☀
MANUAL ○

⬭

**2** Set your answering machine to answer.

- The fax allows the answering machine to answer, then listens for a fax tone, and switches to receive mode automatically if it detects the tone.
- The fax also listens for 6 seconds of silence, also an indication that a fax is coming in. After 6 seconds of silence, the fax automatically switches to receive mode.
- If the fax runs out of paper or toner, it receives the document and stores it in memory. To print out documents in memory, see page 5-21.

**3** When not in use, turn the answering machine off and switch the mode to Manual receive (MANUAL lamp on) or Automatic receive (both the ANS HOOK UP and MANUAL lamps off) using the **ANS HOOK UP/MANUAL** button.

### Adjusting the Fax for Different Types of Answering Machines

Some answering machines listen for a pause and disconnect the line after a certain period of silence. When used with an answering machine, your fax also listens for a pause to determine if a fax is being received.

If your answering machine disconnects before the fax has a chance to switch to receive mode, the caller may not be able to send a fax on the same call.

If you experience this problem, adjust the ANS/FAX SW TIME setting in the RECEIVE (RX) SETUP, (→p. A-8). Adjust so that the required time for the fax to switch occurs prior to the time when your answering machine disconnects automatically.

### Using an Answering Machine

Connecting an answering machine to the fax allows you to receive not only documents sent from other fax machines, but also messages from people calling when you are out of the office. When the fax is connected to an answering machine, all incoming calls are first directed to the answering machine. If the call is from a person, the caller can leave a message. If the call is from a fax machine, your fax receives the document automatically. See Part 2, "Making Connections" for instruction on how to connect the answering machine to the fax.

✔ We do not recommend the use of an "Answering Service" (like those offered by local telephone companies that provide voice mail) on the telephone line you are connecting to the fax. If you do subscribe to an "Answering Service" we suggest that you dedicate a different telephone line to be used for fax communication only and connect that telephone line to the fax.

### Recording the Outgoing Message

When recording a message…

- Try to keep your message to less than 15 seconds long.
- In the message tell your callers how to send a fax.
    - Here's a sample message:
    "Hello. I'm not in the office right now, but please leave a message after the beep. I'll return your call as soon as possible. If you would like to send a fax, press the start button on your fax after recording your message. Thank you."
- Leave a 4-second pause at the beginning of the message (the 4-second pause plus the outgoing message should not exceed a total of 15 seconds).
- Set the answering machine to answer on the first or second ring.

# Receiving Documents in Memory

When the fax unit is receiving a fax, it automatically stores unprinted pages in memory if:

- the fax runs out of paper.
- the fax runs out of toner.
- there is no toner cartridge installed.
- the paper size specified in the FAX PRINTER SETUP is different to the paper size in the paper cassette.
- a paper jam has occurred.
- the message OUTPUT TRAY FULL is displayed.

The fax displays the following messages telling you which of the above has occurred:

```
┌─► ┌──────────────────────┐   ┌──────────────────────┐
│   │ RECEIVED IN MEMORY   │──►│ 23/07 '95 FRI 12:34  │──┐
│   └──────────────────────┘   └──────────────────────┘  │
│   ┌──────────────────────┐   ┌──────────────────────┐  │
└───│ SUPPLY REC. PAPER    │◄──│ RECEIVED IN MEMORY   │◄─┘
    └──────────────────────┘   └──────────────────────┘
         │ Error message
```
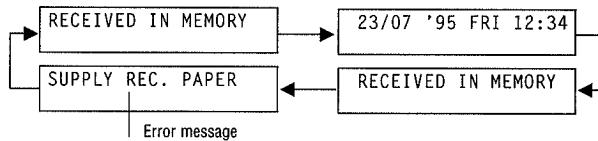
**Error messages**

| | |
|---|---|
| REPLACE CARTRIDGE | (→p. 2-17) |
| SUPPLY REC. PAPER | (→p. 2-22) |
| INSTALL CARTRIDGE | (→p. 2-17) |
| CHECK PAPER SIZE | (→p. A-10) |
| REC. PAPER JAM | (→p. 8-3) |

You need to solve the problem before the fax automatically prints the received fax in memory (see below).

# Printing a Fax from Memory

If power to the fax is cut off, any faxes stored in its fax memory will be saved for approximately an hour. If the power failure lasts longer than an hour, the stored faxes will be lost.

Once you have solved the problem indicated by the error message above, the fax will automatically print the unprinted pages stored in memory.

The fax's memory can store up to 42 A4-size pages. If the memory fills up before a fax is completely received, the remaining pages of the fax will be lost and must be resent.

With the optional 2 MB memory board installed, you can increase the fax's memory to store up to 138 pages.

# Messages Displayed While Receiving a Fax

The messages shown below normally appear while the fax is receiving a fax.

**Receiving a transmission**

```
23/07 '95 FRI 12:34
RECEIVE        P.001
```
                Page no.

**Transaction number**

```
23/07 '95 FRI 12:34
TX/RX NO.      5678
```

During receiving, the following are displayed alternately:

- Condition (RECEIVING)
- Other party's telephone No. (may not be displayed)
- Other party's name (may not be displayed)
- Receiving mode (G3)
- ECM RX (in ECM)
- TX/RX No.
- Page No.

When the document has been received, the following are displayed before the fax returns to standby mode:

- Reception result (RECEPTION OK or an error message)
- TX/RX No.

The fax will print a reception report (RX Report) if it has been set to do so. (→p. 6-6, A-5)

# How to Cancel an Incoming Fax

To cancel an incoming fax:

| ACTION | DISPLAY |
|---|---|

**1** Press **STOP**.

```
CANCEL DURING TX/RX?
YES-(*) NO-(#)
```

**2** Press * to cancel, or # to resume receiving the fax.
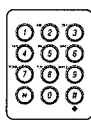
# Special Features

This section describes the fax's speed dialling, group dialling, and special dialling features, along with its memory, copying, and polling functions.

# Speed Dialling

Your Canon fax can store up to 120 phone numbers: up to 20 of your most frequently used numbers can be stored for One-Touch Speed Dialling, and an additional 100 numbers can be stored for Coded Speed Dialling.

## Storing Numbers for One-Touch Speed Dialling

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION    DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Press **SET** twice.

SET    SET

```
1-TOUCH SPD DIAL
01=
```

**3** Use the search buttons to select a One-Touch Speed Dialling button between 01 and 20.

∧    ∨

```
1-TOUCH SPD DIAL
07=
```

- You can also do this by pressing **FUNCTION**, then pressing the One-Touch Speed Dialling button, then pressing **FUNCTION** again.
- If a number is already stored at the button you select, that number appears.
- If the button you select is registered for Group Dialling, GROUP DIAL appears.

**4** Press **SET** twice. Use the numeric buttons to enter the fax number you want to store.

SET    SET

```
TELEPHONE NUMBER
TEL=
```

- Press **SPACE** to enter spaces between numbers. (Spaces are optional and are ignored during dialling.)
- If you want to clear a number or a mistaken entry, press **CLEAR**.
- To enter a pause in the number, press **PAUSE** one or more times. {EC}
- To enter a pause in the number, press **PAUSE** once. {UK}

**5** Press **SET** twice, then use the numeric buttons to store the name that goes with the number. (See page 2-29 for details on entering letters.)

SET     SET     Ex: CANON INC

```
NAME              :A
  CANON INC
```

**6** Press **SET**.

SET

```
1-TOUCH SPD DIAL
3.OPTIONAL SETTING
```

**7** To adjust the transmission settings, press **SET** and follow the instructions on page 5-11.

SET

```
OPTIONAL SETTING
             OFF
```

–or–

To continue registering more numbers and names for One-Touch Speed Dialling, press **DATA REGISTRATION**.

DATA
REGISTRATION

```
1-TOUCH SPD DIAL
08=
```

**8** When you are finished registering numbers and names, press **STOP** to return to standby mode.

```
23/07 '95 FRI 12:34
```

## Using One-Touch Speed Dialling

**1** Place the document face down on the fax, and gently insert it into the automatic document feeder (ADF) until you hear a beep.

**2** Press the desired One-Touch Speed Dialling button.
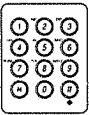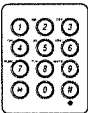
Here are some important points about One-Touch Speed Dialling:

■ If you make a mistake, or want to cancel the dialling, press ⊗ (STOP).

■ You can select up to 20 One-Touch Speed Dialling buttons in a row. The fax will automatically be sent to the numbers you select. (You can also include Coded Speed Dial numbers.)

■ After you press a One-Touch Speed Dialling button, the fax will start scanning in five seconds, even if you don't press ◇ (START/COPY) (ten seconds if you press more than one One-Touch Speed Dialling button). So if you want to send to multiple destinations, be sure to press the second One-Touch Speed Dialling button within five seconds after pressing the first, and press any subsequent buttons within ten seconds.

■ If you don't first place the document into the automatic document feeder (ADF), the fax will display SET DOCUMENT.

■ If no number is stored under the button you press, the fax will display NO TEL #.

✔ When using One-Touch Speed Dialling, make sure the FUNCTION lamp is off.

# Storing Numbers for Coded Speed Dialling

| ACTION | DISPLAY |
|---|---|

**1**

FUNCTION   DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Press **SET**. Use the search buttons to display 2. CODED SPD DIAL.

SET   ∧   ∨

```
SPEED DIAL SETUP
2.CODED SPD DIAL
```

**3** Press **SET**. Use the search buttons to select a two-digit code (00–99) in the display.
If a number is already stored for the code you select, that number appears.

SET   ∧   ∨

```
CODED SPD DIAL
*00=
```

- If a number is already stored at the code you select, that number appears.

- If the code you select is registered for Group Dialling, GROUP DIAL appears.

**4** Press **SET** twice, then use the numeric buttons to enter the fax number you want to store.

SET   SET

```
TELEPHONE NUMBER
TEL=
```

- Press **SPACE** to enter spaces between numbers. (Spaces are optional and are ignored during dialling.)

- If you want to clear a number or a mistaken entry, press **CLEAR**.

- To enter a pause in the number, press **PAUSE** one or more times. {EC}

- To enter a pause in the number, press **PAUSE** once. {UK}

**5** Press **SET** twice, then use the numeric buttons to store the name that goes with the number. (See page 2-29 for details on entering letters.)

SET   SET   Ex: CANON INC

```
NAME          :A
   CANON INC
```

**6** Press **SET**.

SET

```
CODED SPD DIAL
3.OPTIONAL SETTING
```

**7** To adjust the transmission settings, press **SET** and follow the instructions on page 5-11.

SET

```
OPTIONAL SETTING
            OFF
```

–or–

To continue registering more numbers and names for Coded Speed Dialling, press **DATA REGISTRATION**.

DATA
REGISTRATION

```
CODED SPD DIAL
*01=
```

**8** When you are finished registering numbers and names, press **STOP** to return to standby mode.

```
23/07 '95 FRI 12:34
```

You may want to make a list of the numbers and names you store under the Coded Speed Dial codes, and post the list near the fax.

# Using Coded Speed Dialling

**1**

Place the document face down on the fax, and gently insert it into the automatic document feeder (ADF) until you hear a beep.

**2**

Press **CODED DIAL** and use the numeric buttons to enter the desired two-digit code (00–99). (You can enter several codes in a row by pressing **CODED DIAL** between each code.) Then press **START/COPY**.

Ex:
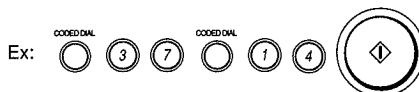
Here are some important points about Coded Speed Dialling:

- ■ If you make a mistake, or want to cancel the dialling, press ⊗ (**STOP**).

- ■ You can enter multiple Coded Speed Dial codes. The fax will automatically be sent to the numbers you selected in the order in which you selected them. (You can also include 20 One-Touch Speed Dialling buttons.)

- ■ Once you enter a two-digit code, the fax will start scanning in five seconds, even if you don't press ◇ (**START/COPY**) (ten seconds if you enter multiple codes). So if you want to send to multiple destinations, be sure to enter the second Coded Speed Dialling code within five seconds after entering the first, and subsequent codes within ten seconds.

- ■ If you don't first place the document into the automatic document feeder (ADF), the fax will display SET DOCUMENT.

- ■ If no number is stored under the button you press, the fax will display NO TEL #.

# Creating Groups for Group Dialling

Group Dialling lets you send a fax to a group of destinations with the press of a single button. The numbers you use in groups must already be stored in One-Touch Speed Dialling buttons or Coded Speed Dialling codes. Each group is stored under a One-Touch Speed Dialling button or a Coded Speed Dialling Code.

Create groups for Group Dialling as follows:

| ACTION | DISPLAY |
| --- | --- |

**1** FUNCTION · DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Press **SET**, then use the search buttons to display 3. GROUP DIAL.

SET · ∧ · ∨

```
TEL REGISTRATION
3.GROUP DIAL
```

**3** Press **SET**.

SET

**4** To store a group under a One-Touch Speed Dialling button: Use the search buttons to select an unused One-Touch Speed Dial button code (01 to 20). If a group or number is already stored in the button you select, 1–TOUCH SPD DIAL or GROUP DIAL is displayed.

∧ · ∨

```
GROUP DIAL
01=
```

–or–

To store a group under a Coded Speed Dialling Code:
Press **CODED DIAL**, then enter an unused two-digit code (01 to 99). If a group or number is already stored in the code you select, CODED SPD DIAL or GROUP DIAL is displayed.

Ex: CODED DIAL ⊙ ⊙

```
GROUP DIAL
*07=
```

✔ Each One-Touch Speed Dial button or Coded Speed Dial code can store either a name and number for speed dialling or a group. Be careful not to override speed dial names and numbers when creating and storing groups.

**5** Press **SET** twice, then use the One-Touch Speed Dial buttons or the **CODED DIAL** button to enter the numbers you want to store in the group.

`TEL⁻`

- If you want to enter a number that is already stored in a One-Touch Speed Dialling button, press **FUNCTION** (the FUNCTION lamp goes off), press the desired one-touch button(s), and press **FUNCTION** again (the FUNCTION lamp goes on).

- If you want to enter a number that is already stored in a Coded Speed Dialling code, press **CODED DIAL**, then enter the two-digit code for the number. (Press **CODED DIAL** between each entry.)

✔ You can not register numbers in the group that have not been registered for Speed Dialling.

**6** Press **SET** twice, then use the numeric buttons to enter a name for the group. (See page 2-29 for details on entering letters.)

Ex: CANON INC

`NAME          :A`
`    CANON INC`
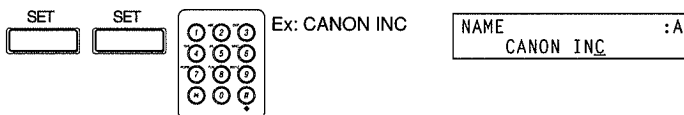
**7** Press **SET**.

To enter additional groups, use the search buttons to select additional One-Touch Speed Dial button codes, then repeat the above procedure starting with step 3. When you finish, press ⊚ **(STOP)** to return to standby mode.

## Using Group Dialling

**1**   Place the document face down on the fax, and gently insert it into the automatic document feeder (ADF) until you hear a beep.

**2**   Press the desired One-Touch Speed Dialling button(s) or enter the Coded Speed Dialling code(s), then press **START/COPY**.

Here are some important points about Group Dialling:

■ If you make a mistake, or want to cancel the dialling, press ⊗ **(STOP)**.

■ You can select several groups in a row. The fax will be sent to all the numbers you select in the order you select them. You can also include numbers stored for One-Touch Dialling or Coded Speed Dialling.

■ Once you select a group, the fax will start scanning in five seconds, even if you don't press ◇ **(START/COPY)** (ten seconds if you enter multiple codes). So if you want to send to multiple destinations, be sure to press the second Group Dialling, Coded Dialling, or One-Touch Speed Dialling button within five seconds after pressing the first, and press any subsequent buttons within ten seconds.

■ If you don't place the document into the automatic document feeder (ADF), the fax will display SET DOCUMENT.

■ The fax can detect if a number is registered more than once (One-Touch Speed Dialling button no.10, for example), and sends the document once only to that number.

■ The TX TYPEset in One-Touch Speed Dialling buttons or Coded Speed Dialling codes remain effective when registered in a group.

■ The TX TYPE feature can not be set in Group Dialling.

When you register a number for One-Touch Speed Dialling or Coded Speed Dialling, you can also set the transmission time, transmission type, long distance setting, and the transmission speed.

Before you can set any of the transmission settings, you need to turn the OPTIONAL SETTING on. Follow the procedure below after completing step 7 on page 5-3 (One-Touch Speed Dialling) or page 5-6 (Coded Speed Dialling).

| ACTION | DISPLAY |
|---|---|

**1** Use the search buttons to display ON.

∧ ∨

```
OPTIONAL SETTING
              ON
```

**2** Press **SET**.

SET

```
OPTIONAL SETTING
1.SET TIME
```

## ■ Setting the Transmission Time

Use this procedure to set the transmission time for a One-Touch Speed Dialling button or a Coded Seed Dialling code.

Make sure the OPTIONAL SETTING is on (see above) before following the procedure below.

| ACTION | DISPLAY |
|---|---|

**1** Use the search buttons to display 1. SET TIME.

∧ ∨

```
OPTIONAL SETTING
1.SET TIME
```

**2** Press **SET**, then use the search buttons to select a line.

- You can set 1 to 5 settings for the transmission time. The procedure is the same for all settings.
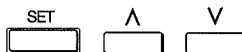
SET ∧ ∨    Ex: Setting 2

```
SET TIME
2:           :
```

✔ To clear a time setting, press **CLEAR**. If you clear all settings, the document will not be sent at a set time.

**3** Press **SET**, then use the numeric buttons to enter the starting time.

- Use the 24-hour system to set the time.
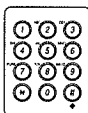
SET    Ex: ⓪ ② ① ⑤

```
SET TIME
2:        02:15
```

**4** Press **SET**.

SET

> SET TIME
> 3:                    :

**5** To continue registering other features for the same number press **DATA REGISTRATION**.

DATA
REGISTRATION

> OPTIONAL SETTING
> 2.TX TYPE

- You do not need to press **DATA REGISTRATION** if the last time setting you set was 5.

–or–

If you are finished, press **STOP** to return to standby mode.

> 23/07 '95 FRI 12:34

# ■ Setting the Transmission Type

Use the expanded transmission feature to set up sending with subaddress and Password for a One-Touch Speed Dialling button or a Coded Speed Dialling code.

Make sure the OPTIONAL SETTING is on (→p. 5-11) before following the procedure below.

**ACTION**                                    **DISPLAY**

**1** Use the search buttons to display 2. TX TYPE.

∧   ∨

> OPTIONAL SETTING
> 2.TX TYPE

**2** Press **SET**, then use the search buttons to display the setting you want to use.

SET   ∧   ∨
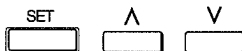
> TX TYPE
>                  REGULAR TX

> TX TYPE
>               PSWD/SUBADDRESS

Use the REGULAR TX setting to turn off a subaddress/password setting if one has been set up.

## Sending with a Subaddress and Password

With the PASSWORD/SUBADDRESS feature, you can send documents with a registered subaddress or password based on the ITU-T standard so that documents transmitted without the corresponding subaddress or password will not be received. To send a document with the PASSWORD/SUBADDRESS feature, it is necessary that the subaddress or the password of the document you wish to send is identical to the subaddress or password of the other fax to which the document is to be transmitted to.

When sending a document using this feature, it is necessary for the receiving party's fax machine to have the same function for receiving. If using a Canon fax machine, the "Memory Box" feature is suitable for this.

The PASSWORD/SUBADDRESS feature may differ depending on the receiving fax machine's settings. When using this feature, check with the other party on how they are using the PASSWORD, SUBADDRESS, and "Memory Box" features before sending a document.

Follow this procedure to set the subaddress and the password for a One-Touch Speed Dialling button or a Coded Speed Dialling code. To set the subaddress and password, display PSWD/SUBADDRESS.

**3** Press **SET** twice, then use the numeric buttons to enter the subaddress.

```
SUBADDRESS
         123456789#
```

- You can enter numbers, an asterisk *, a sharp (#), or spaces up to 20 digits.
- If you wish not to register a subaddress, press **SET**.
- If you make a mistake and want to enter again, press **CLEAR**.

**4** Press **SET** twice, then use the numeric buttons to enter a TX password.
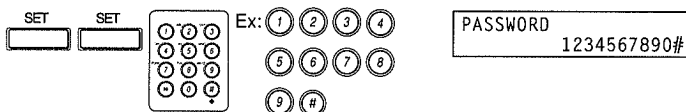
```
PASSWORD
        1234567890#
```

- You can enter numbers, an asterisk *, a sharp (#), or spaces up to 20 digits.
- If you wish not to register a password, press **SET**.
- If you make a mistake and want to enter again, press **CLEAR**.

**5** Press **SET**.

```
OPTIONAL SETTING
3.LONG DISTANCE
```

**6** If you are finished, press **STOP** to return to standby mode.

```
23/07 '95 FRI 12:34
```

# ■ Changing the Long Distance Setting

Use this procedure to change the long distance setting for a One-Touch Speed Dialling button or a Coded Seed Dialling code. Change this setting if you are getting transmission errors when you send documents long distance.

Make sure the OPTIONAL SETTING is on (→p. 5-11) before following the procedure below.

| ACTION | DISPLAY |
|---|---|

**1** Use the search buttons to display 3. LONG DISTANCE.

∧   ∨

```
OPTIONAL SETTING
3.LONG DISTANCE
```

**2** Press **SET**, then use the search buttons to change the setting.

SET   ∧   ∨

```
LONG DISTANCE
          DOMESTIC
```

Select (1), then try to send your document.

```
LONG DISTANCE
     LONG DISTANCE(1)
```

If the setting (1) does not solve the problem, try setting (2) and (3).

```
LONG DISTANCE
     LONG DISTANCE(2)
```

```
LONG DISTANCE
     LONG DISTANCE(3)
```

**3** Press **SET**.

SET

```
OPTIONAL SETTING
4.TX SPEED
```

**4** If you are finished, press **STOP** to return to standby mode.

```
23/07 '95 FRI 12:34
```

# ■ Setting the Transmission Speed

Use this procedure to change the transmission speed for a One-Touch Speed Dialling button or a Coded Seed Dialling code. Change the speed when it takes a long time for your document transmissions to begin.

Make sure the OPTIONAL SETTING is on (→p. 5-11) before following the procedure below.

| ACTION | DISPLAY |
| --- | --- |

**1** Use the search buttons to display 4. TX SPEED.

∧   ∨

```
OPTIONAL SETTING
4.TX SPEED
```

**2** Press SET, then use the search buttons to change the speed setting.

SET   ∧   ∨

```
TX SPEED
            14400bps
```

- If it takes a long time for your document transmissions to begin, this may mean that the telephone lines in your area are in poor condition. If you experience this problem, change the transmission speed from 14400 to 9600 bps or 4800 bps.

```
TX SPEED
             9600bps
```

```
TX SPEED
             4800bps
```

**3** Press SET.

SET

**4** To continue registering other speed dial numbers and names, continue with the procedure from step 2 on page 5-2 (One-Touch Speed Dialling) or page 5-5 (Coded Speed Dialling).

**–or–**

If you are finished, press STOP to return to standby mode.

```
23/07 '95 FRI 12:34
```

In addition to Group Dialling, you can use One-Touch Speed Dialling, Coded Speed Dialling, and manual dialling to send a fax to multiple destinations.

**1** Place the document face down on the automatic document feeder (ADF), and gently insert it until it stops.

**2** Enter the numbers you want to send the fax to. You can do this by pressing One-Touch Speed Dialling buttons, pressing **CODED DIAL** and entering Coded Speed Dial codes, or entering numbers manually using the numeric buttons (one location only), in any combination. (Press **SET** after the number you have entered manually and press **CODED DIAL** between each Coded Speed Dialling entry.)

**3** If you want to review the numbers you entered, press **FUNCTION** and use the search buttons. You can clear a displayed number from the list by pressing **SET**, then **CLEAR**.

**4** Press **START/COPY** to send the fax or wait 10 seconds and the fax will begin scanning automatically.

The numbers you entered are dialled in this order: Coded Speed Dialling, One-Touch Speed Dialling, then manual dialling.

If you find that you frequently send faxes to the same numbers, you can save time by creating a group containing those numbers and using Group Dialling.

✔ If MEMORY FULL is displayed while the document is being scanned, do the following:

- If the message appears while the fax is scanning a one-page document, you can not send it to several locations. Send the document to one location at a time.

- If the message appears after scanning some pages of a multipage document, divide the document into several parts and send each part separately to the locations you have selected.

## Sending a Fax Later

The fax lets you scan a fax into its memory and send it sometime later. This lets you take advantage of lower long-distance rates at night, for example.

**ACTION**        **DISPLAY**

**1** Place the document face down on the automatic document feeder (ADF), and gently insert it until it stops.

**2** Press **FUNCTION**, then **DELAYED TRANSMISSION**, and then **SET**. (The current time is displayed.)

FUNCTION   DELAYED TRANSMISSION   SET

```
DELAYED TX
SET TIME        01:40
```

**3** Use the numeric buttons to enter the time at which you want to send the fax. (Enter the time in 24-hour form: 10:00 p.m. would be 22:00, for example).
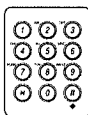
Ex: ② ① ④ ⓪

```
DELAYED TX
SET TIME        21:40
```

**4** Press **SET**.

SET

```
TEL=
```

**5** Enter the number or numbers you want to send to. You can do this by pressing One-Touch Speed Dialling buttons (with the FUNCTION lamp off), pressing **CODED DIAL** and entering Coded Speed Dial codes, or entering numbers manually using the numeric buttons (one location only), in any combination. (Press **SET** after the number you entered manually and press **CODED DIAL** between each Coded Speed Dialling entry.)

**6** Press **SET**.

SET

✔ If MEMORY FULL is displayed while the document is being scanned, the fax can not be sent later.

In this section, we'll explain some special dialling features like dialling through a switchboard, and dialling international numbers.

## Dialling Through a Switchboard

A PBX (private branch exchange) is an on-site telephone switchboard.

- If your fax is connected through a switchboard, dial the outside line number first. Then dial the rest of the number.

- If you want to dial with automatic dialling, you may have to insert a pause between the outside line number and the telephone number when you register the number for One-Touch (→p. 5-2) or Coded Speed Dialling (→p. 5-5).

- When you have to make calls to an extension, you may have to press the **R** {UK, ECG} **I. P.** {ECF} button before you dial the extension number. Before you can use the **R** {UK, ECG} **I. P.** {ECF} button, you have to register it (→p. A-3, 11. R-KEY SETTING).

## Long Distance Dialling

When you register a long distance number, you may have to insert a pause either within or after the number. For long distance dialling, the location and length of the pause may differ depending on the telephone system.

### How to Enter Pauses

Use this procedure to enter pauses within or at the end of numbers.

**1** During dialling registration, when you come to a step that asks you to enter a number for dialling, use the numeric buttons to enter the number.
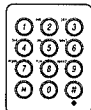
```
TELEPHONE NUMBER
TEL=            03
```

**2** To enter a pause within a number, make sure the FUNCTION lamp is on, then press
   **PAUSE**.

PAUSE

{EC}

| TELEPHONE NUMBER |
|---|
| TEL=    03PP37579448P |

{UK}

| TELEPHONE NUMBER |
|---|
| TEL=     03P37579448P |

- To enter a pause at the end of a number, press **PAUSE** and press **SET**.
- A pause entered within a number is two {EC} four {UK} seconds long.
- If necessary, you can adjust the length of a pause within a number.
  (→p. A-7) {EC}
- To make a longer pause within a number, press **PAUSE** again. Each pause
  adds two seconds to the length of the pause. {EC}
- You can not enter continuous pauses. If necessary, adjust the length of a
  pause within a number. (→p. A-7) {UK}
- A pause at the end of a number is ten seconds long.

## Confirming a Dial Tone

Use this feature only when you register a number. In some areas you may have to
confirm the dial tone in the middle of the facsimile number before dialling the rest of
the number. This is called dial tone detection.

**ACTION**                                           **DISPLAY**

**1** Use the numeric buttons to enter the first part of the number until dial tone
   detection is required.
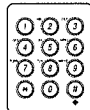
| TELEPHONE NUMBER |
|---|
| TEL=                 348 |

**2** When a dial tone detection is required, make sure the FUNCTION lamp is on, then
   press the **D.T.** button.

D.T.

| TELEPHONE NUMBER |
|---|
| TEL=                348· |

- Where the dial tone is inserted, you will see a small dot. During dialling this
  is where the fax waits for the dial tone.

**3** Enter the remainder of the number.
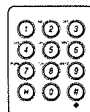
| TELEPHONE NUMBER |
|---|
| TEL=        348·2121 |

# Deleting a Stored Fax from Memory

**ACTION**                                   **DISPLAY**

**1** Press **FUNCTION**, then **MEMORY REFERENCE**.

FUNCTION  MEMORY REFERENCE

```
MEMORY REFERENCE
1.DELETE DOCUMENT
```

**2** Press **SET**, then use the search buttons to select the TX/RX number of the fax you want to delete.

SET   ∧   ∨

```
DELETE DOCUMENT
TX/RX NO.      0002
```

**3** Press **SET**, then press * to delete the fax or # to cancel.

SET   (*) or (#)

```
OK TO DELETE?
YES=(*) NO=(#)
```

**4** Press **STOP** to return to standby mode.

# Resending a Document that Encountered an Error Signal

If you get an error signal when sending a fax from memory, you can try resending it to the same destination without having to scan it again.

**ACTION**                                   **DISPLAY**

**1** Press **FUNCTION**, then **MEMORY REFERENCE**.

FUNCTION  MEMORY REFERENCE

```
MEMORY REFERENCE
1.DELETE DOCUMENT
```

**2** Use the search buttons to display 2. MEM. RETRANSMIT.

∧   ∨

```
MEMORY REFERENCE
2.MEM. RETRANSMIT
```

**3** Press **SET**, then use the search buttons to select the TX/RX number of the fax you want to resend.

SET   ∧   ∨

```
MEM. TRANSMIT
RX/TX NO.      0002
```

**4** Press **SET**.

SET

✔
• This function can only be used when the ERASE FAILED TX setting in the SEND (TX) SETUP menu is set to OFF. (The default setting is ON). See page A-6, for details on changing the setting.
• The fax is erased from memory after it is sent.

# Printing a List of the Documents in Memory

The fax can print out a list of any faxes it has stored in memory, along with the transaction (TX/RX) number of each. Once you know the transaction number of a fax in memory, you can print the fax, send it to another location, or delete it.

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION**, then **MEMORY REFERENCE**.

FUNCTION    MEMORY REFERENCE

```
MEMORY REFERENCE
1.DELETE DOCUMENT
```
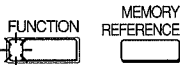
**2** Use the search buttons to select 3. DOC. MEMORY LIST, then press **SET** to print the list.

∧    ∨    SET

```
MEMORY REFERENCE
3.DOC. MEMORY LIST
```

```
PRINTING REPORT
```

17/02 '96 SAT 00:56 FAX 31 20 545 8264        CANON EUROPA                 ☑001

```
            * * * * * * * * * * * * * * *
            *    DOC. MEMORY LIST    *
            * * * * * * * * * * * * * * *
```

| TX/RX NO | MODE | CONNECTION TEL/ID | PGS. | SET TIME | ST. TIME |
|---|---|---|---|---|---|
| 0001 | DELAYED TX | 6566 | 2 | 16/02 01:03 | 01:03 |
| 0003 | DELAYED TX | 865 | 18 | 16/02 01:04 | 01:04 |
| 0014 | TRANSMIT | 05458261 | 1 | 16/02 01:18 | ----- |
| 0042 | TRANSMIT | 8261 | 1 | 17/02 00:16 | ----- |
| 0043 | TRANSMIT | 8261 | 1 | 17/02 00:19 | ----- |

# Printing a Stored Fax

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION**, then **MEMORY REFERENCE**.

FUNCTION    MEMORY REFERENCE

```
MEMORY REFERENCE
1.DELETE DOCUMENT
```
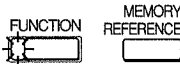
**2** Use the search buttons to select 4. PRINT DOCUMENT.

∧    ∨

```
MEMORY REFERENCE
4.PRINT DOCUMENT
```

**3** Press **SET**, then use the search buttons to select the TX/RX number of the fax you want to print.

SET    ∧    ∨

```
PRINT DOCUMENT
TX/RX NO.        0002
```

**4** Press **SET**; then press * to print the first page of the fax, or # to print the entire fax.

```
PRINT 1ST PG ONLY?
YES=(*) NO=(#)
```

```
TX/RX NO.        0002
PRINTING    P.001/001
```

**5** Press **STOP** to return to standby mode.

## Sending a Stored Fax to Another Destination

Faxes stored in memory can easily be sent out again. If you get an error or busy signal when sending a fax from memory, for example, you can send it to another destination without having to scan it again. Also, faxes the unit receives into memory can be sent to another location.

**ACTION**                                    **DISPLAY**

**1** Press **FUNCTION**, then **MEMORY REFERENCE**.

```
MEMORY REFERENCE
1.DELETE DOCUMENT
```
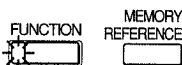
**2** Use the search buttons to select 5. MEMORY TX.
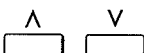
```
MEMORY REFERENCE
5.MEMORY TX
```

**3** Press **SET**, then use the search buttons to select the TX/RX number of the fax you want to resend.
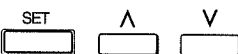
```
MEMORY TX
TX/RX NO.        0002
```

**4** Press **SET**, then enter the number or numbers you want to send to. You can do this by pressing One-Touch Speed Dialling buttons (with the FUNCTION lamp off), pressing **CODED DIAL** and entering Coded Speed Dial codes, or entering numbers manually using the numeric buttons (one location only), in any combination. (Press **SET** after the number you entered manually and **CODED DIAL** between each Coded Speed Dial code.)

**5** Press **SET** twice.

✔ The fax is erased from memory after it is sent.

# If the Power Goes Out...

The fax includes a built-in lithium battery and a backup battery for use in case power to the fax is cut off.

The lithium battery has a life of about five years and will save the fax's registered data for One-Touch Speed Dialling, Coded Speed Dialling, Group Dialling, etc.

However, the backup battery will only save the documents stored in memory for approximately one hour. If the power failure lasts longer than an hour, the stored documents will be lost (in this case, the fax automatically prints a list of the lost documents when power is restored).

### During a Power Failure

While power is out, you can only use the fax to receive telephone calls. You can not make calls, nor send or receive faxes.

### Memory Backup Function

To make the best use of the fax's memory backup, avoid turning the fax off unless absolutely necessary. The backup battery recharges while the fax is powered on, and takes 15 minutes to recharge fully.

## Making Copies

You can use the fax to make one or more copies of your document, as follows.

**ACTION**                                                          **DISPLAY**

**1** Place the document face down on the automatic document feeder (ADF), and gently insert it until it stops.

**2** Press **START/COPY**.

```
COPY
COPY PAGE        01
```

**3** If you want to make more than one copy, use the numeric buttons to enter the number of copies you want (up to 99).
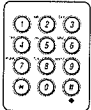
Ex: ②

```
COPY
COPY PAGE        02
```

To make a single copy, leave COPY PAGE set to 01.
The resolution is always set to FINE.

**4** Press **START/COPY**. If you change your mind, press ⊘ (**STOP**).

```
COPY
```

✔ • You may prefer to use face-up delivery if you are making a large number of copies. See "Selecting Paper Delivery" in Part 2 for more details.
   • If MEMORY FULL is displayed while making multiple copies of a document, change the COPY PAGE setting to 01 and make single copies instead (as many times as required).
   • When making copies, the AUTO HALFTONE setting is set to ON.

## Polling to Receive Faxes

The fax's polling feature allows you to request a fax to be sent from another fax machine. The sender only needs to make sure the document is on the fax machine and ready to be sent: when the fax polls that machine, the fax is sent automatically. The fax can poll any fax machine that supports polling. (This process doesn't work in reverse, however: the fax can not be polled by other fax machines.)

### Polling a Fax Machine

To poll another fax machine and receive a fax from it, do the following:

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION**, then **POLLING**.

```
POLLING RX
1.SELECT LOCATIONS
```

**2** Press **SET**.

```
TEL=
```

**3** Enter the fax number or numbers to poll. You can do this by pressing One-Touch Speed Dialling buttons (with the FUNCTION lamp off), pressing **CODED DIAL** and entering Coded Speed Dial codes, or entering numbers manually using the numeric buttons (one location only), in any combination. (Press **SET** after the number you entered manually and press **CODED DIAL** between each Coded Speed Dialling entry.)

**4** Press **START/COPY** and the fax will start to poll automatically.

The fax then begins to receive the fax.

✔ If the sender is using a Canon fax machine, ask him to set the polling ID of his fax to 255 (1111 1111 binary number).
For details on the polling ID, refer to the sender's fax machine manual.

# Using Tone Dialling on a Pulse Line

Even if you have a pulse line, the fax enables you to use tone dialling once you've connected to the number you're calling. This lets you take advantage of many services that require tones, such as selecting options from telephone "touch-line" services.

**1** Press **HOOK** or pick up the handset, then dial the number using the numeric buttons. The fax connects using the pulses required by your phone line.
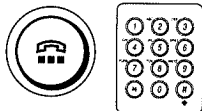
**2** Press **FUNCTION**, then press **TONE/+** to switch to tone dialling.

**3** When you're done, press **HOOK** or hang up the handset.

✔ When registering One-Touch Speed Dialling and Coded Speed Dialling numbers, you can also switch to tone dialling.

Canon FAX-L300 User's Guide

# Use of LOCK PHONE Feature

If you don't want unauthorised people using your Fax-L300 to make calls (with the optional handset or extension telephone) and running up your telephone bill when the office is closed, set LOCK PHONE to ON. When this feature is ON, no one can make a telephone call until the setting is set to OFF.

To restrict access to the LOCK PHONE option, you need to register a password. Set the password and LOCK PHONE option as follows:

| ACTION | DISPLAY |
| --- | --- |

**1**    FUNCTION    DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2**    Use the search buttons to display 7. SYSTEM SETTINGS.

∧    ∨

```
DATA REGISTRATION
7.SYSTEM SETTINGS
```

**3**    Press SET, then use the search buttons to display 1. UN/LOCK PHONE.

SET    ∧    ∨

```
SYSTEM SETTINGS
1.UN/LOCK PHONE
```

**4**    Press SET.

SET

- If a password has already been registered, enter it now, then press SET.

```
UN/LOCK PHONE
PASSWORD       _
```

**5**    Press SET.

SET

- If a password is already registered,    Ex:    it will be displayed:

```
PASSWORD
           1234
```

- If a password is not registered, the following is displayed:

```
PASSWORD
```

**6**    To register or change the current password, enter four numbers, then press SET.

Ex:  ④ ③ ② ①   SET

```
PASSWORD
           4321
```

−or−

To keep the current password, press SET.

SET

---

**7** Use the search buttons to set LOCK PHONE on or off, then press **SET**.

∧ ∨ SET

- The default setting is OFF. Anyone can
  send documents or dial normally.

```
LOCK PHONE
                    OFF
```

- When set to ON, no one can send
  documents or dial until the setting is
  changed to OFF.

```
LOCK PHONE
                     ON
```
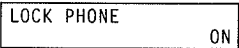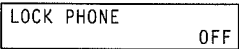
**8** Press **SET** to save the setting, then press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 17:20
```
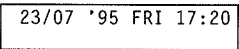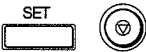
# Using Alternative Telephone Networks (UK only)

The fax has a built-in feature that allows you to send documents and make telephone calls with an alternative long-distance service, such as the 2300 Service of Mercury Communications Limited. If you subscribe to such a service, you can save money on most long distance international communications.

The procedures described in this section show you how to use your fax with the 2300 Service of Mercury Communications Limited. For details on using your fax with alternative telephone services, contact your Canon authorised representative.

## Attaching the M Label (UK only)

Before operating the fax, attach the M label to help you identify the button as shown below.
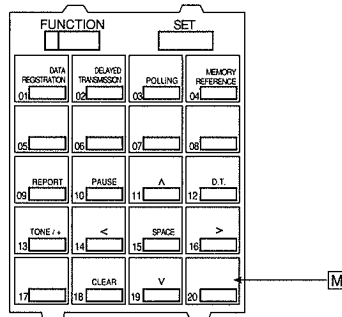
## Registering an Alternative Telephone Network

**ACTION** **DISPLAY**

**1** Press **FUNCTION** and **DATA REGISTRATION**.
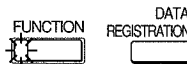
```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 2. USER SETTINGS.

```
DATA REGISTRATION
2.USER SETTINGS
```

**3** Press **SET**, then use the search buttons to display 12. M-KEY SETTING.

```
USER SETTINGS
12.M-KEY SETTING
```

**4** Press **SET**, then use the search buttons to select.

SET  ∧  ∨

```
ACCESS CODE
                    132
```

• You can select 132 (default) or 131P ("P" means a four-second pause).

**5** Press **SET**, then use the numeric buttons to enter the ID code.

Ex: ① ② ③ ④ ⑤
⑥ ⑦ ⑧ ⑨ ⑩

```
ID CODE
          1234567890
```
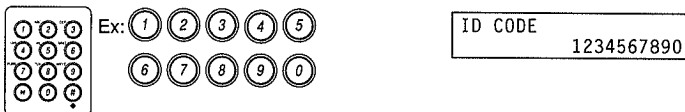
• This code is given to you by Mercury Telecommunications Limited.

• If your access code is 132, you don't have to enter the ID code. Go on to the next step.

• If your access code is 131 you will need to enter your Personal Identification Number (PIN).

• If you need to enter a code, you can enter up to 20 digits (pauses are unnecessary).

• If an ID code is already registered, you will see a string of asterisks ****** on the display.

**6** Press **SET**, then press **STOP** to return to standby mode.

SET

```
23/07 '95 FRI 17:20
```

# Sending with an Alternative Telephone Network

**1** Place the document face down on the automatic document feeder (ADF), and gently insert it until it stops.

**2** Press **FUNCTION**, then **M**.

FUNCTION  M

```
TEL=                   M
```

**3**

Use the numeric buttons to enter the facsimile or telephone number of the other party.
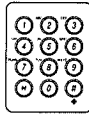
Ex: (4)(1)(6)(7)(9)
(5)(1)(1)(1)(1)

```
TEL=     M4167951111
```

**4**

Press **START**.

- The fax automatically dials the access code and ID code registered under the M button. Next, the fax dials the number of the other party and connects the call. In order to protect your codes, the access code and ID code are not printed on activity reports.

## Registering Speed Dialling with the M Button

Follow this procedure to enter your access code and ID code when you register a number for One-Touch or Coded Speed Dialling. This allows you to send documents over the 2300 Service of Mercury Communications Limited at the press of a button.

**1**

Before you can do this procedure, you must register the access code and ID code.

**2**

While you are registering a number for One-Touch or Coded Speed Dialling, and you come to a step that asks you enter the facsimile number of the other party, press **M**.

M

```
TELEPHONE NUMBER
TEL=              M
```

**3**

Use the numeric buttons to enter the facsimile number.
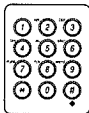
Ex: (4)(1)(6)(7)(9)
(5)(1)(1)(1)(1)

```
TELEPHONE NUMBER
TEL=     M4167951111
```

**4**

Continue with the procedure for registering One-Touch or Coded Speed Dialling.

- After you have registered the number for speed dialling, you can dial and use the 2300 Service without press the M button.

# Activity Reports

**Part 6**

This part describes how to print a variety of reports.

# Printing Transaction Reports

The fax can print a variety of reports that will help you keep track of your transactions and the information registered in your fax. To select specific report types, see "REPORT SETTINGS" in Appendix A. (→p. A-4)

## Activity Management Reports

Activity management reports provide a record of the last 40 transmissions your fax sends or receives.

**1** Press **FUNCTION** then **REPORT**.

FUNCTION    REPORT

An activity management report similar to that shown below prints out.

```
20/02 '96 TUE 16:35 FAX 31 20 545 8264     CANON EUROPA                    ☑001

                    * * * * * * * * * * * * * * *
                    *      ACTIVITY REPORT      *
                    * * * * * * * * * * * * * * *
```

| ST. TIME | CONNECTION TEL | CONNECTION ID | NO. | MODE | | PGS. | RESULT | |
|----------|----------------|---------------|-----|------|---|------|--------|---|
| *17/02 01:57 | 8261 | CENV | 0059 | TRANSMIT | ECM | 1 | OK | 00'23 |
| *17/02 01:58 | 8261 | CENV | 0060 | TRANSMIT | ECM | 1 | OK | 00'24 |
| *17/02 01:59 | 8261 | CENV | 0061 | TRANSMIT | ECM | 1 | OK | 00'26 |
| *17/02 02:00 | 8261 | CENV | 0062 | TRANSMIT | ECM | 1 | OK | 00'24 |
| *17/02 02:01 | 8281 | CENV PATRICIA | 0063 | TRANSMIT | ECM | 1 | OK | 00'24 |
| *17/02 02:02 | 8261 | CENV | 0064 | TRANSMIT | ECM | 1 | OK | 00'26 |
| *17/02 02:03 | 8260 | CENV/BMTS | 0065 | TRANSMIT | ECM | 1 | OK | 00'26 |
| *17/02 02:04 | 8261 | CENV | 0066 | TRANSMIT | ECM | 1 | OK | 00'25 |
| *17/02 02:05 | 8261 | CENV | 0067 | TRANSMIT | ECM | 0 | NG | 00'10 |
| | | | | | | | 0 STOP | |
| *17/02 02:06 | 8261 | CENV | 0068 | TRANSMIT | ECM | 1 | OK | 00'22 |
| *17/02 02:07 | 05458261 | | 0069 | TRANSMIT | | 0 | NG | 00'10 |
| | | | | | | | 0 #018 | |

If marked with an asterisk, the document has already been printed out.

Transaction number

Sending mode

Transaction via Error Correction Mode

The number of the page with an error

Error code: Describes the nature of the error

**STOP** was pressed during transaction

■ The fax will automatically print an activity management report after every 40 transactions. You can also set it not to do so. (→p. A-5)

■ The fax prints sending and receiving transactions together in the same report, though you can also set it to print sending and receiving transactions in separate reports. (→p. A-5)

```
20/02 '96 TUE 19:18 FAX 31 20 545 8264      CANON EUROPA                    ☒001
                  * * * * * * * * * * * * * * * * * *
                  *     ACTIVITY MANAGEMENT REPORT TX     *
                  * * * * * * * * * * * * * * * * *| * * *
```

| ST. TIME | CONNECTION TEL | CONNECTION ID | NO. | MODE | | PGS. | RESULT | |
|---|---|---|---|---|---|---|---|---|
| *17/02 02:01 | 8281 | CENV PATRICIA | 0063 | TRANSMIT | ECM | 1 | OK | 00'24 |
| *17/02 02:02 | 8261 | CENV | 0064 | TRANSMIT | ECM | 1 | OK | 00'26 |
| *17/02 02:03 | 8260 | CENV/BMTS | 0065 | TRANSMIT | ECM | 1 | OK | 00'26 |
| *17/02 02:04 | 8261 | CENV | 0066 | TRANSMIT | ECM | 1 | OK | 00'25 |
| *17/02 02:05 | 8261 | CENV | 0068 | TRANSMIT | ECM | 1 | OK | 00'22 |
| *17/02 02:06 | 8261 | CENV | 0069 | TRANSMIT | ECM | 1 | OK | 00'25 |
| *17/02 02:07 | 8281 | CENV PATRICIA | 0070 | TRANSMIT | ECM | 1 | OK | 00'25 |

Send and receive transactions listed separately

```
                  * * * * * * * * * * * * * * * * * *
                  *     ACTIVITY MANAGEMENT REPORT RX     *
                  * * * * * * * * * * * * * * * * * *
```

| ST. TIME | CONNECTION TEL/ID | RX NAME | NO. | MODE | | PGS. | RESULT | |
|---|---|---|---|---|---|---|---|---|
| *19/02 20:25 | +31 20 545 8208 | CENV SMD | 5008 | AUTO RX | ECM | 1 | OK | 00'35 |
| *19/02 20:28 | 31 20 5458281 | CENV PATRICIA | 5009 | AUTO RX | ECM | 1 | OK | 00'34 |
| *19/02 21:18 | | | 5010 | AUTO RX | G3 | 0 | NG | 00'10 |
| | | | | | | | 0 | |
| *19/02 21:22 | | | 5011 | AUTO RX | G3 | 0 | NG | 00'10 |
| | | | | | | | 0 | |
| *20/02 00:21 | | CENV | 5012 | AUTO RX | ECM | 1 | OK | 00'30 |
| *20/02 00:23 | | CENV | 5013 | AUTO RX | ECM | 1 | OK | 00'33 |
| *20/02 16:13 | +31 20 545 8208 | CENV SMD | 5014 | AUTO RX | ECM | 1 | OK | 00'35 |

# Transmission Reports

The fax normally prints an activity report for sending only when an error occurs during sending, but you can also set it to print a report every time you send a fax. (→p. A-5)

```
17/02 '96 SAT 01:10 FAX 31 20 545 8264        CANON EUROPA                    001

                        * * * * * * * * * * * * * * *
                        *      ERROR TX REPORT      *
                        * * * * * * * * * * * * * * *


            TX FUNCTION WAS NOT COMPLETED


            TX/RX NO                  0003
            CONNECTION TEL                            865
            SUBADDRESS
            CONNECTION ID
            ST. TIME                  17/02 01:10
            USAGE T                   00'00
            PGS.                        0 (  0)
            RESULT                    NG
                                        0    #018
```

The "PGS." item of the report displays the number of pages sent or unsent according to the results of the transmissions. Below are some examples:

3     OK: All three pages sent.

2 (3)   OK: Two pages sent in the second attempt. Total number of pages sent is three.

2 (1)   NG: An error occurred while sending the second page during the second attempt. Total number of pages sent is one.

0 (0)   NG: No pages sent in the first or second attempt.

2 (2)   NG: An error occurred while sending the second page during the second attempt. Total number of pages sent is two.

The fax will print a report after a second attempt at sending a document.

When you set the fax to print the first page of the documents

```
20/02 '96 TUE 19:27 FAX 31 20 545 8264        CANON EUROPA                    001

                         * * * * * * * * * * * * * * *
                         *         TX REPORT         *
                         * * * * * * * * * * * * * * *


              TRANSMISSION OK

              TX/RX NO                0092
              CONNECTION TEL                              8261
              SUBADDRESS
              CONNECTION ID           CENV
              ST. TIME                20/02 19:27
              USAGE T                 00'31
              PGS.                    1
              RESULT                  OK
```

**THE SLEREXE COMPANY LIMITED**

SAPORS LANE - BOOLE - DORSET - BH 25 8 ER

TELEPHONE BOOLE (945 13) 51617 - TELEX 123456

Our Ref. 350/PJC/EAC                          18th January, 1972.

Dr. P.N. Cundall,
Mining Surveys Ltd.,
Holroyd Road,
Reading,
Berks.

Dear Pete,

Permit me to introduce you to the facility of facsimile
transmission.

In facsimile a photocell is caused to perform a raster scan over
the subject copy. The variations of print density on the document
cause the photocell to generate an analogous electrical video signal.
This signal is used to modulate a carrier, which is transmitted to a
remote destination over a radio or cable communications link.

At the remote terminal, demodulation reconstructs the video
signal, which is used to modulate the density of print produced by a
printing device. This device is scanning in a raster scan synchronised
with that at the transmitting terminal. As a result, a facsimile
copy of the subject document is produced.

Probably you have uses for this facility in your organisation.

Yours sincerely,

*Phil.*

P.J. CROSS
Group Leader - Facsimile Research

■ You can print part of the first page of the fax being sent on the activity report.

# Reception Reports

The fax normally does not print an activity report for receiving, but you can set it to do so every time you receive a fax. (→p. A-5)

```
20/02 '96 TUE 16:14 FAX 31 20 545 8264      CANON EUROPA                    001
                        * * * * * * * * * * * * * * * *
                        *        RX REPORT          *
                        * * * * * * * * * * * * * * * *


                RECEPTION OK

                TX/RX NO               5014
                CONNECTION TEL             +31 20 545 8208
                SUBADDRESS
                CONNECTION ID          CENV SMD
                ST. TIME               20/02 16:13
                USAGE T                00'35
                PGS.                   1
                RESULT                 OK
```

■ You can also set the fax to print an activity report only when an error occurs during receiving. (→p. A-5)

# Memory Clear Reports

If you experience a power failure, every document stored in memory will be lost after about one hour. As soon as power is restored, the fax will automatically print out a list of documents that were stored in memory at the time of the power failure.

```
19/02 '96 MON 09:27 FAX 31 20 545 8264      CANON EUROPA                    001
                        * * * * * * * * * * * * * * * *
                        *      MEMORY CLEAR REPORT    *
                        * * * * * * * * * * * * * * * *
```

| TX/RX NO. | MODE | CONNECTION TEL | PAGES | SET TIME | START TIME |
|-----------|-----------|----------------|-------|----------|------------|
| 0033 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:05 | |
| 0034 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:06 | |
| 0032 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:03 | |
| 0035 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:08 | |
| 0036 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:09 | |
| 0037 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:10 | |
| 0038 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:10 | |
| 0039 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:11 | |
| 0040 | MEMORY RX | 31 20 545 8264 | 1 | 16/02  19:12 | |

# Printing Information Registered in the Fax

## Printing a List of User's Data

Use the following procedure to print a list of the data registered in the fax. This list allows you to review all the settings available and the selections currently in place for your FAX-L300.

**ACTION**                                                              **DISPLAY**

**1** Press **FUNCTION**, **DATA REGISTRATION**, and **SET**.

FUNCTION   DATA REGISTRATION   V   SET

```
USER SETTINGS
1.DATE & TIME
```

**2** Press **REPORT** to print the user's data list.

REPORT

```
PRINTING REPORT
```

```
20/02 '96 TUE 19:29 FAX 31 20 545 8264        CANON EUROPA                    ☑001

                              * * * * * * * * * * * * * *
                              *    USER'S DATA LIST    *
        EC-01-03 /02          * * * * * * * * * * * * * *


        USER SETTINGS
             UNIT TELEPHONE #                        31 20 545 8264
             UNIT NAME                         CANON EUROPA
             TX TERMINAL ID                    ON
                 TTI POSITION                      OUTSIDE IMAGE
                 TELEPHONE # MARK                  FAX
             AUTO HALFTONE                     OFF
             SCANNING CONTRAST                 STANDARD
             OFFHOOK ALARM                     ON
             VOLUME CONTROL
                 CALLING VOLUME                VOL MID
                 KEYPAD VOLUME                 VOL MID
                 ALARM VOLUME                  VOL MID
             RX CALL LEVEL                     STANDARD
             TEL LINE TYPE                     TOUCH TONE
             R-KEY SETTING                     PBX
                 PBX                               EARTH CONNECTION

        REPORT SETTINGS
             TX REPORT                         OUTPUT YES
                 REPORT WITH TX IMAGE              ON
=============================================================================
        SYSTEM SETTINGS
             RESTRICTIVE CODES
                 TEL SETTING                       OFF
             RX RESTRICTION                    OFF
             DATE FORMAT                       DD/MM 'YY
             DISPLAY LANGUAGE                  ENGLISH
             TX START SPEED                    14400bps
             RX START SPEED                    14400bps

                 DIAL DIGITS REMAIN                        98%
                 EXTENSION MEMORY                     2.208MByte
```
Amount of memory remaining for One-Touch or Coded Speed Dialling

# Printing a List of Registered Telephone Numbers

Use this procedure to print separate lists of the One-Touch, Coded Speed, and Group Dialling numbers registered in the fax.

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION**, **DATA REGISTRATION**, and **SET**.

FUNCTION  DATA REGISTRATION  SET

```
SPEED DIAL SETUP
1.1-TOUCH SPD DIAL
```

**2** Press **REPORT** to print a list of registered speed dial numbers.

REPORT

```
PRINTING REPORT
```

### One-Touch Speed Dialling Report 1

```
20/02 '96  TUE  19:55  FAX  31 20 545 8264      CANON EUROPA                    001
```

```
* * * * * * * * * * * * * * * * *
*    1-TOUCH SPD DIAL LIST 1    *
* * * * * * * * * * * * * * * * *
```

| NO. | CONNECTION TEL | CONNECTION ID | TX TYPE | ⏱ |
|---|---|---|---|---|
| [ 01] | 8261 | CANON-TEST | REGULAR TX | |
| [ 02] | 05458261 | CENV | REGULAR TX | |
| [ 03] | 05458281 | CENV PATRICIA | REGULAR TX | |
| [ 04] | 05458260 | CENV/BMTS | REGULAR TX | |
| [ 05] | 05458208 | CENV SMD | REGULAR TX | |

Sending method

Preset sending time

### Coded Speed Dialling Report 1

```
20/02 '96  TUE  19:55  FAX  31 20 545 8264      CANON EUROPA                    001
```

```
* * * * * * * * * * * * * * * * *
*    CODED SPEED DIAL LIST 1    *
* * * * * * * * * * * * * * * * *
```

| NO. | CONNECTION TEL | CONNECTION ID | TX TYPE | ⏱ |
|---|---|---|---|---|
| [* 00] | 00441256841300 | CANON AUDIO | REGULAR TX | |
| [* 01] | 6128052011 | CANON AUSTRIA | REGULAR TX | |
| [* 02] | 14167951111 | CANON CANADA | REGULAR TX | |
| [* 03] | 33149392525 | CANON FRANCE | REGULAR TX | |
| [* 04] | 26822672 | GINGI | REGULAR TX | |
| [* 05] | 5706425 | ALEXANDRIA | REGULAR TX | |

### Group Dialling Report

```
20/02 '96 TUE 20:23 FAX 31 20 545 8264       CANON EUROPA                      ☑001
                       * * * * * * * * * * * * * * * * * *  ~
                       *       GROUP DIAL LIST          *
                       * * * * * * * * * * * * * * * * * *

  [ 06] CANON GERMANY        [ 01] 8261                  CANON-TEST
                             [ 03] 05458281              CENV PATRICIA
                             [ 05] 05458208              CENV SMD

  [ 07] CANON HQ             [ 04] 05458260              CENV/BMTS
                             [ 05] 05458208              CENV SMD

  [ 08] GROUP A              [ 03] 05458281              CENV PATRICIA
                             [ 04] 05458260              CENV/BMTS

  [ 09] GROUP SIX            [ 01] 8261                  CANON-TEST
                             [ 02] 05458261              CENV
                             [ 03] 05458281              CENV PATRICIA

  [ 10]                      [ 01] 8261                  CANON-TEST
                             [ 02] 05458261              CENV
                             [ 03] 05458281              CENV PATRICIA
                             [ 05] 05458208              CENV SMD
```

## Printing a Detailed List of One-Touch Speed Dialling Numbers

Use this procedure to print a detailed list of the One-Touch Speed Dialling numbers registered in the fax.

| ACTION | DISPLAY |
|---|---|
| **1** Follow steps 1 to 3 on page 5-2. | `1-TOUCH SPD DIAL`<br>`    00=` |

- If there is a group registered in "00", use the search buttons to select a button registered for One-Touch Speed Dialling.

| **2** Press **SET**, then press **REPORT** to print the list. | `1-TOUCH SPD DIAL`<br>`1.TELEPHONE NUMBER` |

SET     REPORT

## One-Touch Speed Dialling Report 2

```
20/02 '96  TUE  20:28 FAX  31 20 545 8264        CANON EUROPA               ☑001
                         * * * * * * * * * * * * * * * * * * * * *
                         *     1-TOUCH SPD DIAL LIST 2      *
                         * * * * * * * * * * * * * * * * * * *

  [ 01]    CONNECTION TEL                8261
           CONNECTION ID                 CANON-TEST
           TX SPEED                      14400bps(0)
           TX TYPE                       REGULAR TX

  [ 02]    CONNECTION TEL                05458261
           CONNECTION ID                 CENV
           TX SPEED                      14400bps(0)
           TX TYPE                       REGULAR TX

  [ 03]    CONNECTION TEL                05458281
           CONNECTION ID                 CENV PATRICIA
```

# Printing a Detailed List of Coded Speed Dialling Numbers

Use this procedure to print a detailed list of the Coded Speed Dialling numbers registered in the fax.

| ACTION | DISPLAY |
|---|---|
| **1** Follow steps 1 to 3 on page 5-5. | CODED SPD DIAL<br>*00= |

- If there is a group registered in "*00", use the search buttons to select a code registered for Coded Speed Dialling.

**2** Press **SET**, then press **REPORT** to print the list.

| SET | REPORT | CODED SPD DIAL<br>1.TELEPHONE NUMBER |
|---|---|---|

## Coded Speed Dialling Report 2

```
20/02 '96  TUE  20:29 FAX  31 20 545 8264        CANON EUROPA               ☑001
                         * * * * * * * * * * * * * * * * * * * * *
                         *     CODED SPEED DIAL LIST 2     *
                         * * * * * * * * * * * * * * * * * * *

  [* 00]    CONNECTION TEL               00441256841300
            CONNECTION ID                CANON AUDIO
            TX SPEED                     14400bps(0)
            TX TYPE                      REGULAR TX

  [* 01]    CONNECTION TEL               6128052011
            CONNECTION ID                CANON AUSTRIA
            TX SPEED                     14400bps(0)
            TX TYPE                      REGULAR TX

  [* 02]    CONNECTION TEL               14167951111
            CONNECTION ID                CANON CANADA
```

# Maintenance

The fax is designed to operate with a minimum of regular maintenance, as described in this chapter.

Use the procedures in this section to keep your fax in top working order.

## Cleaning the Fax

Clean your fax regularly to help ensure good performance.

Follow these precautions whenever you clean the fax:

- Before you clean the fax, be sure to print any faxes stored in memory.
- Do not use tissue paper, paper towels, or similar materials for cleaning; they can stick to the components or generate static charges.

### Cleaning the Outer Casing

Clean the fax's outer casing as follows:

When you unplug the fax, be sure to plug it in again as soon as possible: without power, it will retain any data in image memory for about an hour. After this, the data will be lost.

**1** Unplug the fax.

**2** Lightly wipe the unit's outer casing with a clean, soft, lint-free cloth moistened with water or diluted dishwashing detergent solution.

Do not use thinner, benzene, alcohol, or other inorganic solvents to clean the fax, or you can discolour it or cause it to malfunction.

**3** Plug the fax back in.

## Cleaning the Inside of the Fax

To prevent toner powder and paper dust from accumulating and affecting the quality of the fax's printing, clean the inside of the fax periodically as follows:

✔ When you unplug the fax, be sure to plug it in again as soon as possible: without power, it will retain any data in image memory for about an hour. After this, the data will be lost.

**1** Unplug the fax.

**2** Open the printer door.
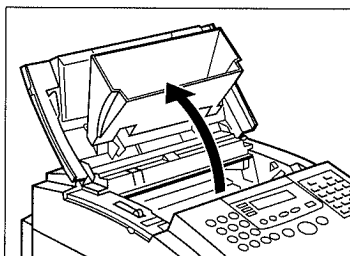
**3** Remove the toner cartridge.

- Store the cartridge in its protective bag to avoid exposure to light.

**4** Use a clean, soft, dry, lint-free cloth to remove any toner or paper debris from the shaded area.
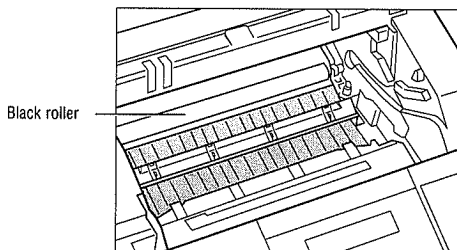
Black roller

⚠ Do not touch the black roller at the back, as this may affect the print quality of your faxes.

**5** Replace the toner cartridge.

**6** Close the printer door.

**7** Plug the fax back in.

## Cleaning the Scanner Components

Periodically check the scanning glass and rollers.

✔ When you unplug the fax, be sure to plug it in again as soon as possible: without power, it will retain any data in image memory for about an hour. After this, the data will be lost.

**1** Unplug the fax.

**2** Open the operation panel.
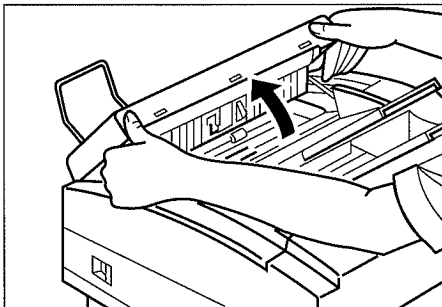


**3** Use a soft, dry clean cloth to clean the scanning glass and rollers (shaded areas).

- If the document scanning glass and rollers are dirty, the documents you send or print will be dirty, too.

- Clean with a soft cloth that will not scratch the glass or rollers.



Scanning glass
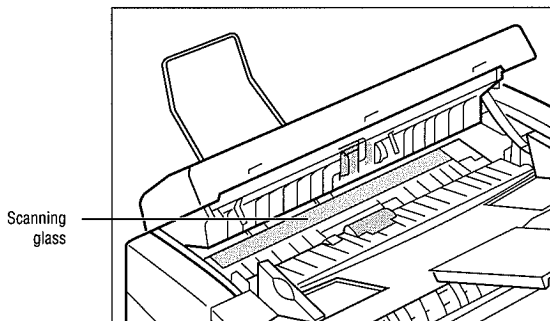
**4** Clean the shaded areas of the operation panel and the fax.

- Dirt and dust particles that collect on the underside of the operation panel also affect the quality of documents you copy and send.
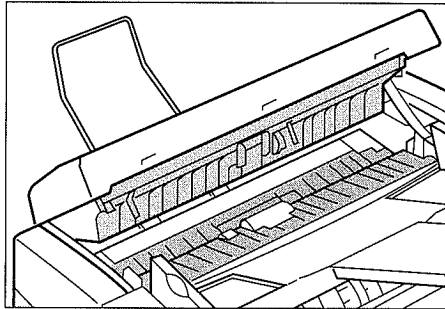
**5** Use a soft, dry clean cloth to wipe up paper dust around the rollers.

**6** When you are finished, close the operation panel by pressing it down from the centre as shown.
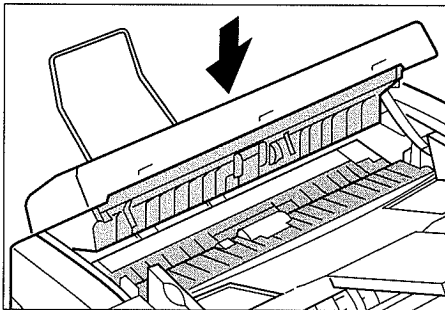
✔ Be sure to close the operation panel until it locks into place. Otherwise the fax will not function properly.

**7** Plug the fax back in.

# Troubleshooting

This part describes the troubleshooting procedures to use should a problem occur when using the fax.

Use the information in this section to solve any problems you may have when using your fax.

## Paper Jams

On occasion, the document feeding into the fax or the paper in its printing unit may misfeed or jam. If this happens, you can usually fix the problem easily using the procedures below.

✔ You do not need to unplug the fax while clearing paper jams.

### Document Feed Jams and Misfeeds

Use this procedure if the document being fed into the fax jams or misfeeds. In this case, CHECK DOCUMENT is displayed.

**1** Lift and open the operation panel.
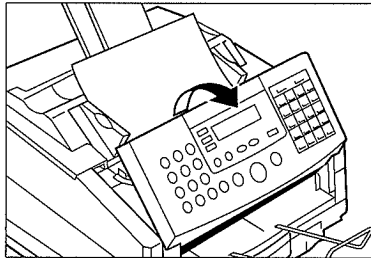
- Pulling the document without opening the operation panel may cause it to tear or become soiled.

**2** With the operation panel open, remove the document by pulling it up.
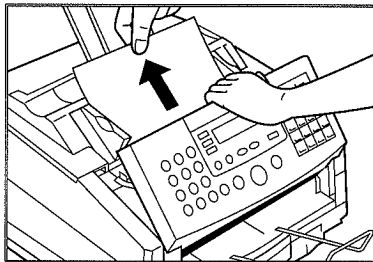
**3** Close the operation panel by pressing it down from the centre.

**4** Press **STOP**.

**5** Reset the document as described on page 3-4.

### Recording Paper Jams

If the recording paper jams or misfeeds while you are printing or copying, check the following areas in the order described below.

Be sure to remove any documents or printed pages from the fax before removing the paper jam.

■ Paper Cassette Area

**1** Remove the paper cassette.
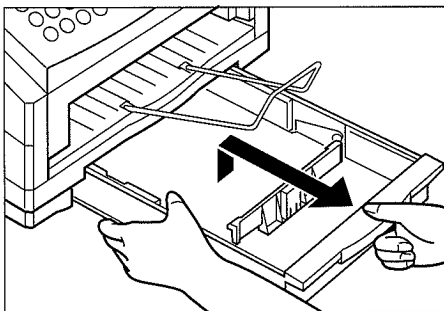


• Be careful not to drop the cassette as you pull it out.

**2** If there is any jammed paper inside the fax, gently pull it out of the unit being careful not to tear it.
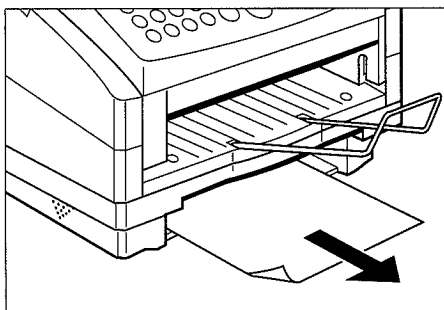
**3** Remove the stack of paper from the cassette and do the following:

    a. Fan the stack of paper, and tap it on a flat surface to even out the stack.

    b. Reinsert the stack of paper into the cassette. Make sure all corners and edges are flat and even, that the stack is not higher than the limit mark (▼ ▼ ▼), and that it fits under the tabs on the paper selector.
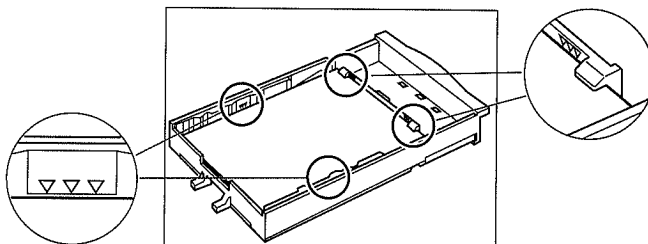
**4** Replace the paper cassette.

- If the paper cassette jams when you try inserting it in the fax, remove it from the fax and open the printer door. Then close it and try reinserting the paper cassette.

- If the paper jam occurred while receiving a document, the remainder of the document is received in memory. Once the paper jam is cleared, the document in memory will automatically be printed.

- If the error message remains displayed, there may be more jammed paper in other areas. Check the other areas as described on the following pages.

■ Inside the Fax

**1** Open the printer door by grasping it on both sides and lifting it up.
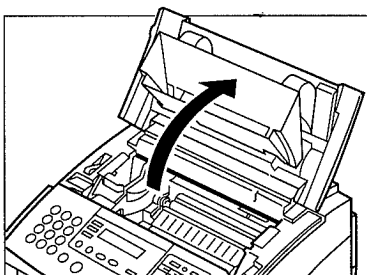


**2** Remove the toner cartridge from the fax.

 • Store the cartridge in its protective bag to avoid exposure to light.

**3** Use the front cover release latch to open the front cover.
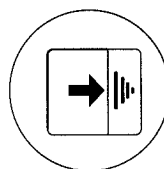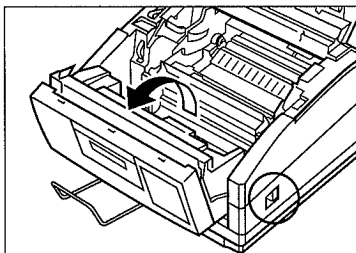


Do not open the front cover without pushing the release latch as this may cause damage to your fax. Be sure to use the front cover release latch to open the front cover.
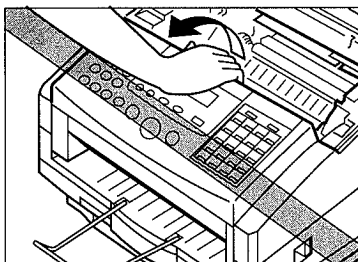
**4** Check where the paper is jammed.

**5** If the leading edge of the jammed paper is visible, gently pull it out being careful not to tear it.
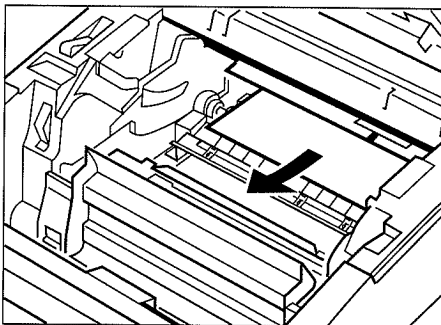
The toner is not yet fixed to the paper in this area; take care not to dirty yourself or the inside of the printer.

**6** Lower the plastic cover and gently remove any jammed paper from the unit by pulling it forward.
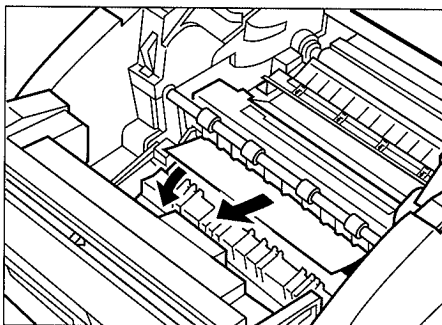
**7** If necessary, gently pull the paper upwards to remove it from the fax.
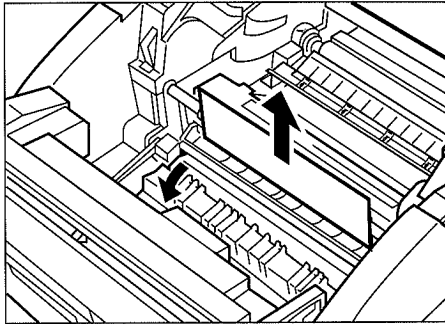
**8** Open the rear cover.
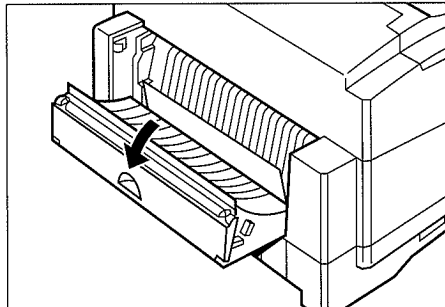
**9** Gently pull out any jammed paper from the rear area being careful not to tear it.
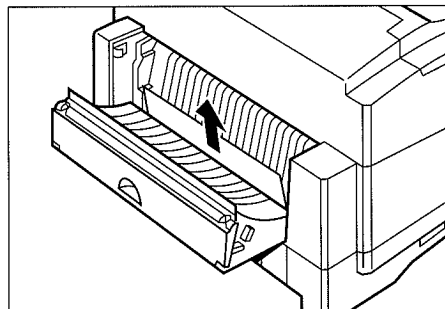
**10** Close the rear cover.

**11** Replace the toner cartridge.

**12** Close the printer door and front cover.

- If the paper jam has been cleared completely, the fax will work normally.

# Problems Sending Faxes

### The document does not feed properly

- Remove the document, stack it, and place-it back in the automatic document feeder (ADF). For multipage documents remove the document and tap the edge of the stack on a flat surface to even the edges. Then place it back in the automatic document feeder (ADF) until it stops. (→p. 3-4)
- Clean the fax roller as described on page 7-4.
- Make sure the operation panel is properly closed. (→p. 7-5, step 6)

### Can't send a fax

- Make sure you get a dial tone when you lift the handset. If there is no dial tone, make sure the fax is properly connected as described on page 2-13. If there is still no dial tone, contact your local telephone company.
- Make sure the dialling method (tone or pulse) is set correctly. See page A-3, "TEL LINE TYPE" and page 2-36 for details on setting.
- If you used a One-Touch or Coded Speed Dialling button, check its contents to make sure they are correct.
- If using memory sending, make sure no documents are waiting to be sent ahead of your document or that your document was not deleted from memory.
- The unit may have overheated and shut itself down. If you suspect this, turn it off and let it cool for several minutes, then try using it again.
- Print an activity report and check for an error code. (→p. 6-2)
- Call the person you're sending the fax to and make sure their fax machine has paper in it and is ready to receive faxes.
- Make sure the receiving fax machine is a G3 machine.
- If none of the above seem to help, try turning the fax off. Wait five seconds and turn it on again.

### The faxes you send are spotted or dirty

- Find out whether the problem is in your fax by making a copy with it: if the copy is clear, the receiving fax machine may be causing the problem; if the copy is spotted or dirty, clean the inside of your fax (→p. 7-3)

### Can't send using error correction mode (ECM)

- Make sure your fax is set for ECM sending. (→p. A-7)
- Make sure the receiving fax machine supports ECM; many do not. If the receiving machine does not support ECM, the fax automatically sends the fax in normal mode.

### Errors frequently occur during sending

- Lower the speed at which the unit sends faxes in the TX START SPEED setting of the SYSTEM SETTINGS (14400 bps to 9600 bps for example). (→p. A-13)
  If lowering the speed solves the problem for a number registered in a One-Touch Speed Dial button or a Coded Speed Dial code, register this speed in the transmission settings so that future documents are also sent at this speed. (→p. 5-15)

# Problems Receiving Faxes

### The recording paper jams frequently

- Make sure the recording paper and the paper cassette are properly set as described on page 2-22.

### The fax doesn't automatically switch between phone and fax transmissions

- Make sure the ANS HOOK UP and MANUAL lamps are off. If necessary, press the button below them repeatedly until both are off.
- Make sure the receiving mode is set to FAX/TEL AUTO SW. See page A-8 for details on setting.

### The fax won't receive faxes automatically

- Make sure you have printed out or deleted any documents in the fax's memory.
- Make sure the fax is set to receive automatically: press the button below the ANS HOOK UP and MANUAL lamps repeatedly until both lamps are off.
- Make sure the paper cassette has paper in it.
- Check the display for an error message. (→p. 8-14)
- Make sure all phone line connections are secure. (→p. 2-13)
- Print an activity report and check for an error code. (→p. 6-2)
- Make sure the receiving mode is set to AUTO RX.

### The fax won't receive faxes manually
### (Optional handset or extension phone connected to the fax machine)

- You may have pressed ◇ (START/COPY) after hanging up the handset. When receiving a fax manually, you must hang up the handset after pressing ◇ (START/COPY).
- Check the display for an error message. (→p. 8-14)
- Print an activity report and check for an error code. (→p. 6-2)

### The fax won't receive using ECM

- Make sure the fax is set for ECM receiving. (→p. A-8)
- Make sure the sender's fax machine supports ECM. If it doesn't, the fax is sent in normal mode without error checking.

### Errors frequently occur during receiving

- Lower the speed at which the unit receives faxes in the RX START SPEED setting of the SYSTEM SETTINGS (14400 bps to 9600 bps for example). (→p. A-13)

If the faxes you receive don't print out properly, see "Problems Printing," below.

# Problems Printing

If the fax's print quality becomes unsatisfactory, consider the following suggestions:

■ Most paper has one side that provides better print quality than the other. If the print quality is poor, try turning the paper over and printing on the other side.

■ If the characters and images are blurred, make sure you're using the correct type of paper, and printing in the correct printing area.

■ If the reverse side of the printed page is smudged, the inside of the fax is probably soiled with toner powder. Clean the inside of the unit with clean soft, dry, lint-free cloth. (→p. 7-3)

■ If printed images are blotched or uneven, the problem may be noise in the phone/fax lines. Try using ECM receiving (though if the lines are very busy or in poor condition, you may have to ask the sender to try again). See page A-8 for details on setting ECM.

Also, remember that the sending fax machine usually determines the quality of the fax. To see if your fax is the cause of the problem, use it to make a copy: if the copy is clear, the sending fax machine may be the problem; if the copy is not clear, the fax may need to be cleaned.

### Nothing prints

● Make sure the seal has been removed from the toner cartridge.
● Replace the toner cartridge.

■ If the following print quality problems occur over the entire printing area, try the remedies listed below.

| Print | Most Probable Cause | Remedy |
|---|---|---|
| Smudged | Wrong paper type | Try a different type |
| Blurred | Wrong paper type | Try a different type |
| Faded | Toner is low or unevenly distributed | See page 8-12 |
| White streaks | Toner is low or unevenly distributed | See page 8-12 |

## Vertical White Streaks

Vertical white streaks may appear when the error message REPLACE CARTRIDGE is displayed. This indicates that the toner level is low or that the toner is unevenly distributed. If this happens, follow these steps:

**1** Open the printer door and take out the toner cartridge.

**2** Gently rock the cartridge from side to side five or six times to evenly distribute the toner inside.
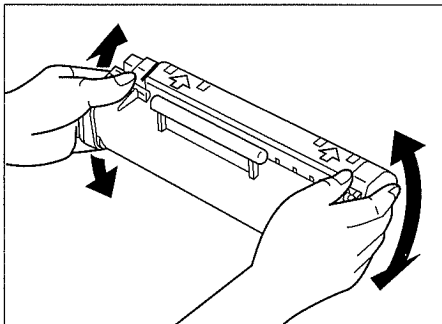


**3** Put the cartridge back into the fax.

**4** Close the printer door.

If the problem continues, the cartridge needs to be replaced. See page 2-17, "The Toner Cartridge" for details on replacing the FX3 toner cartridge.

# Miscellaneous Problems

### The telephone doesn't work

- Make sure the phone line is correctly connected to the fax. (→p. 2-13)
- Make sure the fax is set for the type of line you have (pulse or tone). (→p. 2-36, A-3)

### The phone disconnects while you are talking

- If the ANS HOOK UP lamp is lit, press the button below it repeatedly to turn it off. The ANS HOOK UP lamp should light only when an answering machine is connected and turned on.

### Nothing appears in the display

- Make sure the fax is plugged in.

### Can't make copies

- Make sure the ⌨ (HOOK) button is not depressed. Press it to release if needed.
- Make sure the handset is in its hook.
- When making multiple copies and MEMORY FULL is displayed:
  There is not enough memory for the whole document. Divide your document into several parts and copy each part separately.
  If this message occurs when your document is only one page long, we recommend you increase the fax's memory with the optional memory board.

### Can't poll other units

- Make sure the other fax machine is ready to send.

### The paper cassette can not be inserted

- Make sure there is no jammed paper inside the fax. Open the printer door, then close it and try reinserting the paper cassette.

### The toner cartridge can not be removed

- Remove the cartridge following the instruction described on page 2-18.

The following pages show the messages that may appear on your fax's display, along with the meaning of each, and what to do if that message appears.

| Message | Error # | Meaning | Solutions |
|---|---|---|---|
| AUTO REDIAL | | The receiving fax was busy, and the fax is redialling. | Refer to page 3-8 to cancel the transmission if you want. |
| BUSY/NO SIGNAL | #005 | The other party did not answer. | Start again from the beginning. |
| | – | The other party is not using a G3 unit. | Contact the other party and have them send or receive the document using a G3 machine. |
| | #018 | The other party does not answer, even after redialling. | Wait a while and try again. If you still can't send, the receiving fax may be off. |
| | | The touch tone/rotary pulse setting on your fax is incorrect. | Set your fax to the setting that matches your telephone line. (→p. 2-36) |
| | | The receiving fax did not answer within 35 seconds. | Contact the other party and have them check their fax. You can try to send the document manually. For an overseas call, add pauses at the end of the registered number. (→p. 5-18) |
| CANNOT DO POLLING RX | #021 #008 | You can not poll. | If the other party is using a Canon fax machine, ask him to set the polling ID of his fax to 255. (→p. 5-25) |
| CHECK DOCUMENT | | A page may be jammed in the automatic document feeder (ADF). | Remove the jammed page and try again. (→p. 8-2) |
| | | Polling error. The document has not been fed into the automatic document feeder (ADF) correctly on the sender's fax machine. | Ask the sender to remove the document and reinsert it properly in the fax machine. (→p. 3-4) |
| CHECK PAPER SIZE | – | The recording paper size loaded in the paper cassette and that specified in the fax printer setup are different. | Set the correct paper size in the FAX PRINTER SETUP. (→p. A-11) |
| CHECK PRINTER | – | Fax malfunction. | Press ⊘ (STOP) or unplug the fax, then plug it in again. If the display doesn't change, call for service. |
| CHECK PRT/FRNT COVRS | – | The printer door or front cover is open. | Make sure that the printer door and front cover are completely closed. |
| COMMUNICATING PLEASE WAIT | – | You tried to use manual sending while the fax was sending from memory. | Wait until the fax is sent, then try again, or use memory sending. (→p. 3-6) |
| DIALING | – | The fax is dialling the receiving fax machine. | Press ⊘ (STOP) if you want to cancel the transmission. |
| DOCUMENT READY | – | The document is in the automatic document feeder (ADF) and ready for faxing or copying. | Send the fax or make a copy, or remove the document from the automatic document feeder (ADF). |

| Message | Error # | Meaning | Solutions |
|---------|---------|---------|-----------|
| DOCUMENT TOO LONG | #003 | The document is longer than 1 m. | Use a copy machine to make a reduced copy of the document. Then send again. |
| ECM RX | – | The fax is receiving a fax using ECM. | ECM transmissions may take longer than normal transmissions. Try turning if off if you need to receive quickly, or if you know your local phone lines are in good condition. |
| ECM TX | – | The fax is sending a fax using ECM. | ECM transmissions may take longer than normal transmissions. Try turning if off if you need to transmit quickly, or if you know your local phone lines are in good condition. |
| ERASING END | #995 | The document was deleted from the memory. | – |
| HANG UP PHONE | – | The optional handset or the extension telephone is off the hook. | Make sure the handset is set properly in its cradle. |
| INSTALL CARTRIDGE | – | The toner cartridge is not installed. | Install the cartridge, making sure it is all the way in. See page 2-17 for replacing the toner cartridge. |
| MEMORY FULL | #037 | The fax's memory is full because it has received too many documents or a very detailed document. | Print out any documents that are stored in memory. Then start the operation again. |
| | | | If the memory contains any faxes you don't need, delete them. |
| | | | You can not receive a fax in memory if the fax was scanned with fine graphic images. |
| | – | The fax's memory is full because you tried to send too many pages at once. | Divide the document and send each part separately. Turn AUTO HALFTONE OFF. (→p. 3-13) |
| MEMORY FULL PLEASE WAIT | – | The fax is sending a fax from memory and its memory is full. | Wait until the fax is sent. The fax continues to send the fax as memory becomes available. |
| MEMORY IN USE  nn% | – | Shows the percentage of memory currently in use. | If you need more space, print and check the memory list, then clear any unnecessary documents. |
| NO ANSWER | | The receiving fax machine does not answer. | Make sure you dialled the correct number. Try again later. |
| NO RX PAPER | #012 | The receiving fax machine is out of paper, or its memory is full. | Call the other party and ask them to put paper in their machine, or to clear their fax machine's memory. |
| NO TEL # | #022 | The button you pressed has no number registered for One-Touch Speed Dialling, Coded Speed Dialling, or Group Dialling. | Print a list of registered numbers and make any corrections needed, then try again. |

**Display Messages and Meanings**

| Message | Error # | Meaning | Solutions |
|---|---|---|---|
| NOT AVAILABLE NOW | #025 | In manual sending (using OFF HOOK) you tried to use a One-Touch or Coded Speed Dial number that has a group registered. | In manual sending you can not send a document to multiple destinations. Send the document to each location at a time. |
| OUTPUT TRAY FULL | | The face-down slot is full with printed pages. | Remove the pages from the face-down slot. |
| PLEASE WAIT | – | The fax is warming up. | Wait until you see the standby mode message, then begin. |
| REC. PAPER JAM | #009 | The fax has a paper jam. | Clear the paper jam. (→p. 8-2) |
| RECEIVED IN MEMORY | – | The fax received a fax in memory because the paper or toner ran out. | Change the cartridge or add recording paper, then print the fax from memory. |
| REPLACE CARTRIDGE | – | The toner cartridge is out of toner. | Replace the toner cartridge. (→p. 2-17) |
| START AGAIN | – | An error occurred on the phone line or in the system. | Start the procedure again from the beginning. |
| | #080 | The other party might not have set the subaddress. | Call the other party and check to see if the subaddress has been set. |
| | #081 | The other party might not have set the password. | Call the other party and check to see if the password has been set. |
| | #102 | The subaddress and/or password does not match the settings on the other party's fax unit. | Call the other party and check to see if the subaddress and the password are the same as those of the other party. |
| SUPPLY REC. PAPER | | The fax is out of paper. | Add more paper to the paper cassette. Make sure the stack is below the limit mark (▼▼▼). (→p. 2-24) |
| TX/RX CANCELLED | – | You pressed the ⊘ (**STOP**) button to cancel the current operation. | – |
| TX/RX NO.  nnnn | – | When the fax sends or receives a fax, it assigns it a unique identification number. | Write the number down if you'll need it later. |

# The Menu System

**Appendix A**

This appendix summarizes the
FAX-L300's menu system. Use this as a
guide to help customize how your fax
operates.

The fax's menu system allows you to customize the way your fax works. The following pages outline the fax's various menus and settings, and shows how to use them.

✔ The default settings in the following tables are shown by asterisks (*).

## To Access SPEED DIAL SETUP:

| ACTION | DISPLAY |
|---|---|
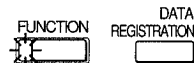
**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION   DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Press **SET**, then use the search buttons to display the item you want to set or change.

SET   ∧   ∨
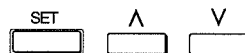
- For more details on registering numbers, see page 5-2.

## To Access USER SETTINGS:

| ACTION | DISPLAY |
|---|---|
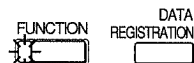
**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION   DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 2. USER SETTINGS.

∧   ∨

```
DATA REGISTRATION
2.USER SETTINGS
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change (see the following table).

SET   ∧   ∨
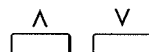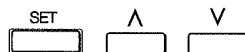
```
USER SETTINGS
3.UNIT NAME
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

∧   ∨
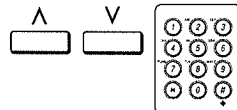
**5** Press **SET**.

SET
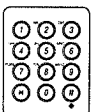
# USER SETTINGS

| Menu Item<br>Sub-item | Description | Options | Comments |
|---|---|---|---|
| 1. DATE & TIME | Enter the date and time. | – | Enter the time (in 24-hour form) and date with the numeric buttons. |
| 2. UNIT TELEPHONE # | Enter your fax number. | – | Enter up to 20 digits. |
| 3. UNIT NAME | Enter your name or your company name. | – | Enter up to 24 characters. |
| 4. TX TERMINAL ID | Prints your fax information at the top of each fax you send. | ON*, OFF | ON: Prints your fax information.<br>OFF: Does not print your fax information. |
| 1. TTI POSITION | Select the position of the TX Terminal ID on your outgoing fax. | OUTSIDE IMAGE*, INSIDE IMAGE | Set where you want the information to print on the faxes you send. |
| 2. TELEPHONE# MARK | Choose the prefix that will appear before the fax number. | FAX*, TEL | Example: FAX 1-800-555-1234<br>TEL 1-800-555-1234 |
| 5. AUTO HALFTONE | Select the type of document you are going to scan. (Can not be set for copying.) | ON*, OFF | Select auto halftone for documents that contain halftone images (such as photographs). |
| 6. SCANNING CONTRAST | Select a setting to fine-tune the contrast of the faxes you send. | DARKER, STANDARD*, LIGHTER | Choose the setting for the type of document you send most often. |
| 7. OFFHOOK ALARM {Not ECG} | Turn the handset off-hook alarm on or off. | ON*, OFF | You may want to turn this off if you work in a quiet office. |
| 8. VOLUME CONTROL | Adjust the volume of the fax's speaker for F/T switching, the keypad touch beep, and alarms. | | Adjust the volume to suit your office environment. |
| 1. CALLING VOLUME | | MIN, MID*, MAX | |
| 2. KEYPAD VOLUME | | OFF, MIN, MID*, MAX | |
| 3. ALARM VOLUME | | OFF, MIN, MID*, MAX | |
| 9. RX CALL LEVEL | Adjust the fax's volume sound level of incoming calls for F/T switching. | STANDARD*, HIGH | Adjust the volume to suit your office environment. |
| 10.TEL LINE TYPE | Choose the dialling method. | TOUCH TONE*, ROTARY PULSE {UK} TOUCH TONE, ROTARY PULSE* {EC} | Choose the setting that matches your phone line. |
| 11.R-KEY SETTING | Sets the type of the PBX through which your fax is connected. | PSTN*, PBX | PSTN: Your fax is connected to the outside line.<br>PBX: Your fax is connected through a PBX.<br>You can set the type of the PBX among PREFIX, HOOKING, and EARTH CONNECTION. If you select PREFIX, you can set the number up to 20 digits that will access the outside line. Be sure to enter a pause (P) after the prefix number. |
| 12.M-KEY SETTING (UK only) | Sets an access code and an ID code for the 2300 service of Mercury Communications Limited. | – | You can enter up to 20 digits for an access code and an ID code. |

*Default

## To Access REPORT SETTINGS:

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION    DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 3. REPORT SETTINGS.

∧    ∨

```
DATA REGISTRATION
3.REPORT SETTINGS
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change (see the following table).

SET    ∧    ∨

```
REPORT SETTINGS
2.RX REPORT
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

SET    ∧    ∨

**5** Press **SET**.

SET

# REPORT SETTINGS

| Menu Item Sub-item | Description | Options | Comments |
|---|---|---|---|
| 1. TX REPORT | Set whether the fax prints an activity report for faxes it sends. | PRINT ERROR ONLY*, OUTPUT YES, OUTPUT NO | PRINT ERROR ONLY prints a report only when an error occurs during sending. OUTPUT YES: Prints a report every time you send a fax or after redialling is complete. OUTPUT NO: Prints no report when sending. |
| REPORT WITH TX IMAGE | If you choose OUTPUT YES or PRINT ERROR ONLY, set whether the first page of the fax also prints. | ON*, OFF | Use the printed first page for filing and reference. |
| 2. RX REPORT | Set whether the fax automatically prints an activity report when it receives a fax. | PRINT ERROR ONLY, OUTPUT YES, OUTPUT NO* | OUTPUT YES: Prints a report every time the fax receives a fax. OUTPUT NO: Prints no reports when receiving. PRINT ERROR ONLY prints a report only when an error occurs when receiving. |
| 3. ACTIVITY REPORT | Set how and when the fax automatically prints activity management reports. | | |
| 1. AUTO PRINT | Print a report automatically after every 40 transactions. | ON*, OFF | ON: A report prints after every 40 transactions. OFF: No report is printed automatically. |
| 2. TX/RX SEPARATE | Set how the report will be printed. | ON, OFF* | ON: Transmitted faxes and received faxes are included in separate reports. OFF: All transactions are included in a single report. |

*:Default

# To Access SEND (TX) SETUP:

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION    DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 4. SEND (TX) SETUP.

∧    ∨

```
DATA REGISTRATION
4.SEND (TX) SETUP
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change (see the following table).

SET    ∧    ∨

```
SEND (TX) SETUP
1.ECM TX
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

SET    ∧    ∨

**5** Press **SET**.

SET

# SEND (TX) SETUP

| Menu Item | Description | Options | Comments |
|-----------|-------------|---------|----------|
| Sub-item | | | |
| 1. ECM TX | Turn Error Correction Mode (ECM) for transmissions on or off. | ON*, OFF | ON: Transmitting is done in error correction mode. OFF: Transmitting is done without error correction. |
| 2. MID PAUSE SET | Set the length of the pause entered by each press of the PAUSE button. | 01-15 SEC (02*) {EC} 04-11 SEC (04*) {UK, HK} | |
| 3. AUTO REDIAL | Set whether the fax automatically redials when receiving line is busy or when an error occurs. | ON*, OFF | If you turn AUTO REDIAL on, you can make the additional settings below. |
| 1. REDIAL TIMES | Set the maximum number of redials. | 01-15 (02*) TIMES 01-02 (02*) {AUS} 01-03 (02*) {UK, HK} 01-04 (02*) {IRE} 01-05 (02*) {NZ} 01-10 (02*) {SIN} | |
| 2. REDIAL INTERVAL | Set how long the fax waits between rediallings. | 02-99 (02*) MIN 01-99 (02*) {AUS, HK, MAL} 06-99 (02*) {NZ} | |
| 3. TX ERROR RESEND | Set whether the fax redials if an error occurs while sending. | ON*, OFF | ON: The fax redials after a sending error. OFF: The fax does not redial. |
| RESEND TX FROM | Set which pages to resend if TX ERROR RESEND is on. | ERROR & 1ST PG*, ERROR PAGE, ALL PAGES | ERROR PAGE: Resends only the pages after the error occurred on. ERROR & 1ST PG: Resends the first page and the pages after the error occurred on. ALL PAGES: Resends all the document pages. |
| 4. ERASE FAILED TX | Set whether the fax in memory is erased if an error occurs during sending. | ON, OFF* {EC} ON*, OFF {UK,GER} | ON: The fax is automatically erased after being successfully sent (originally an error occurred during sending.) OFF: The document will remain in memory even if an error occurs during sending. |
| 5. AUTO START TX | When sending to multiple numbers, set whether the fax starts scanning the document five seconds after the first number is entered, and ten seconds after the second and all subsequent numbers. If the machine begins scanning before you have entered all numbers, you must scan the document again for those missed numbers. | ON*, OFF | ON: The fax scans the document in five or ten seconds. OFF: The fax does not scan the document in 5 or 10 seconds. Press ◊ (START/COPY) to scan the document. Otherwise, the fax will return to standby mode after 60 seconds. |

*:Default

## To Access RECEIVE (RX) SETUP:

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION    DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 5. RECEIVE (RX) SETUP.

∧    ∨

```
DATA REGISTRATION
5.RECEIVE(RX) SETUP
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change.

SET    ∧    ∨

```
RECEIVE (RX) SETUP
2.RX MODE
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

SET    ∧    ∨

**5** Press **SET**.

SET
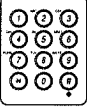
## RECEIVE (RX) SETUP

| Menu Item Sub-item | Description | Options | Comments |
|---|---|---|---|
| 1. ECM RX | Turn Error Correction Mode (ECM) receiving on or off. | ON*, OFF | ON: Receiving is done in error correction mode. OFF: Receiving is done without error corrrection. |
| 2. RX MODE | Set how the fax handles incoming calls. | AUTO FAX RX*, FAX/TEL AUTO SW, | AUTO FAX RX: Treats all calls as faxes. FAX/TEL AUTO SW: Switches between fax/phone receiving automatically. |

| Menu Item | Description | Options | Comments |
|---|---|---|---|
| **Sub-item** | | | |
| 2. RX MODE (Cont.) | | | |
| If you select FAX/TEL AUTO SW, you can also set items 1. to 3. below: | | | |
| 1. F/T RING TIME | Set how long the fax rings when it receives a phone call. | 10-45 SEC (22*) | Set the time of fax rings. |
| 2. F/T SWITCH ACTION | Set the response when no one lifts the handset within the specified time in 1. F/T RING TIME. | RECEIVE*, DISCONNECT | RECEIVE: the fax switches to receive mode. DISCONNECT: the fax disconnects the call. |
| 3. OUTGOING MESSAGE | Sets the language of the outgoing message to send when a call is received. | OFF*, ON {EC} ON* {UK} | If you select ON {EC}, you can select one or two languages for the outgoing message: English, French, Spanish, German, Italian, Dutch, Finnish, Portuguese, Norwegian Swedish, Danish, and Greek. {UK, EC} |
| 3. FAX INCOMING RING | Set whether the fax rings when it receives a fax. | ON, OFF* | ON: The fax rings when it receives a fax. OFF: The fax does not ring when it receives a fax. |
| RING COUNT | Set how many times the fax rings when it receives a fax. | 01-99 times (02*) | |
| 4. ANS/FAX SWITCH | Set whether the fax switches to automatic fax receive mode when the caller does not talk. | ON*, OFF | ON: The fax switches to automatic fax receive mode when the answering machine is turned on. |
| ANS/FAX SW TIME | Set how long the fax waits before switching to automatic fax receiving mode when the caller does not talk. | 01-99 SEC (06*) | Set a time from 01 to 99 seconds. |
| 5. MAN/AUTO SWITCH | Set whether the fax switches from manual receive mode to document receive mode after ringing for a set time. | ON, OFF* | ON: The fax switches to document receive mode after ringing for a set time. OFF: In manual receive mode, the fax does not switch to document receive mode. |
| RING TIME | Set how long the fax rings before switching to document receiving. | 01-99 SEC (10*) | Set a time from 01 to 99 seconds. |
| 6. REMOTE RX | Set whether remote receiving is on or off. | ON*, OFF | With ID #remote receiving ON, you can dial a number code on a remote extension to receive a fax. |
| REMOTE RX ID | Lets you change the remote receiving ID (ID CALL #). | 00-99 (25*) | Enter a new ID from 00 to 99. |
| 7. MEMORY RX | Set whether the fax stores the reminder of an incoming fax in memory if paper runs out during reception. | ON*, OFF | ON: The fax stores the remainder of the fax if paper runs out. OFF: The fax does not store the remainder of the fax if paper runs out. |
| 8. RX PAGE FOOTER | Sets the fax to print the time a document is received, the transaction number, page numbers, and other useful information. | ON, OFF* | OFF: Prints no footer information ON: Prints footer information |

*:Default

## To Access FAX PRINTER SETUP:
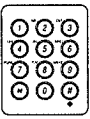
**ACTION**                                                    **DISPLAY**

**1** Press **FUNCTION** and **DATA REGISTRATION**.

FUNCTION   DATA REGISTRATION

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 6. FAX PRINTER SETUP.

∧   ∨

```
DATA REGISTRATION
6.FAX PRINTER SETUP
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change.

SET   ∧   ∨

```
FAX PRINTER SETUP
4.TONER SUPPLY LOW
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

SET   ∧   ∨

**5** Press **SET**.

SET

## FAX PRINTER SETUP

| Menu Item | Description | Options | Comments |
|---|---|---|---|
| Sub-item | | | |
| 1. SELECT PAPER SIZE | Select size of paper being used. | LTR, LGL, A4* | Select either Letter-, Legal-, or A4-size paper. The paper cassette needs to be adjusted for paper sizes other than A4. For more details, contact an authorised Canon Facsimile Service Dealer. |
| 2. AUTO RX REDUCTION | Reduce received faxes to fit on the recording paper. | ON*, OFF | ON: Documents are reduced to fit the recording paper. OFF: Documents are not reduced to fit the recording paper. In this case, one page may be printed on two pages. |
| 3. TONER SAVER | Set whether economy print is on or off. If set to on, you can print about twice as many pages. | ON, OFF* | ON: Decreases the amount of toner used during printing. (Note: With this setting, print quality may deteriorate even before the toner cartridge runs out.) OFF: Prints normally. |
| 4. TONER SUPPLY LOW | Determine if printing continues when the toner level drops in the cartridge. | RECEIVE IN MEMORY*, PRINT AUTOMATICALLY | RECEIVE IN MEMORY: Receives the documents in memory as soon as the toner level in the cartridge is low. KEEP PRINTING: Continues printing even after the toner level in the cartridge is low. (Note: With this setting, print quality may deteriorate even before the toner cartridge runs out.) |

*:Default

## To Access SYSTEM SETTINGS:

| ACTION | DISPLAY |
|---|---|

**1** Press **FUNCTION** and **DATA REGISTRATION**.

```
DATA REGISTRATION
1.SPEED DIAL SETUP
```

**2** Use the search buttons to display 7. SYSTEM SETTINGS.

```
DATA REGISTRATION
7.SYSTEM SETTINGS
```

**3** Press **SET**, then use the search buttons to display the item you want to set or change.

```
SYSTEM SETTINGS
5.TX START SPEED
```

**4** Press **SET**, then use the search buttons to select menu items and sub-items, and the numeric buttons to enter information.

**5** Press **SET**.

# SYSTEM SETTINGS

| Menu Item | Description | Options | Comments |
|---|---|---|---|
| Sub-item | | | |
| 1. UN/LOCK PHONE | Restricts sending documents and dialling (with the optional handset or extension telephone). Does not restrict incoming calls. | | After a password is set, you have to enter it before you can access the menu below. |
| 1. PASSWORD | Register a password. | 0000-9999 | Set a four-digit password. |
| 2. LOCK PHONE | Lets you restrict sending documents and dialling. | ON, OFF* | OFF: Anyone can send documents or dial normally. ON: No one can send documents or dial until the setting is set to OFF. |
| 2. RX RESTRICTION | Enable/disable reception that is restricted to only numbers registered in your fax for One-Touch or Coded Speed Dialling to avoid receipt of "junk" mail. | ON, OFF* | OFF: Anyone can dial your fax and send a document. ON: A party can dial your fax and send a document only if their number is registered on your fax speed dialling. |
| 3. DATE FORMAT | Set the format used for dates displayed on the fax and printed on faxes you send. | DD/MM 'YY*, MM/DD YY, 'YY MM/DD | YY: Year MM: Month DD: Day |
| 4. DISPLAY LANGUAGE | Set the language for the message displayed in the LCD during operation of the fax. | ENGLISH*, FRENCH, SPANISH, ITALIAN, FINNISH, GERMAN, DANISH, SWEDISH, DUTCH, NORWEGIAN, PORTUGUESE, SLOVENE | Choice of 12 languages. |
| 5. TX START SPEED | Set the transmission speed used to send faxes. | 14400 bps*, 9600 bps, 7200 bps, 4800 bps, 2400 bps | The higher the setting, the faster the transmission. If you experience problems when sending faxes, try a lower setting. |
| 6. RX START SPEED | Set the speed used to receive faxes. | 14400 bps*, 9600 bps, 7200 bps, 4800 bps, 2400 bps | The higher the setting, the faster the fax is received. If transmission errors occur frequently, set a lower speed. |

*:Default

# Specifications

The specifications for the FAX-L300 are
listed in this section.

# Specifications

| | |
|---|---|
| **Document size:** | Maximum width     259 mm |
| | Minimum width     146.5 mm |
| | Minimum length     105 mm |
| **Effective image size:** (When scanning) | Width (A4) 208 mm |
| **Recording paper size:** | Width (A4) 210 mm |
| **Transmission time:** | ECM-MMR              approx. 6 sec./page* |
| | G3 MR Standard mode     approx. 12 sec./page* |
| | G3 MH Standard mode     approx. 15 sec./page* |
| **Scanning line density:** | |
| Horizontal | 8 dots/mm |
| Vertical | Standard     3.85 line/mm |
| | Fine          7.7 line/mm |
| **Scanning method:** | Solid state electronic scanning by contact image sensor |
| **Recording method:** | Laser beam printing |
| **Applicable lines:** | Subscriber's telephone circuit (PSTN) |
| **Auto dial functions:** | One-Touch Speed Dialling (Registration for 20 numbers) |
| | Coded Speed Dialling (Registration for 100 numbers) |
| **Power source:** | 200-240 V/50-60 Hz |
| **Power consumption:** | Standby     approx. 6 W |
| | Operation     approx. 540 W (20% of document black copy) |
| **Operating environment:** | Temperature     10-32.5°C |
| | Humidity     20%-80% RH |
| **Weight:** | Approx. 12 kg |
| **Dimensions:** (W × D × H) | 383 mm × 445 mm × 269 mm (Without optional handset or trays) |
| **Image memory capacity** (transmission/reception) | Standard: 42 pages* 138 pages* (with 2 MB extension memory) |

* Based on Canon FAX Standard Chart No. 1, standard mode

Specifications subject to change without notice.

# Options

## Handset

You may want to attach a handset to your fax unit instead of using an extension telephone.

## Package Contents

Make sure you have the following items. If anything is damaged or missing, notify your Canon dealer immediately.

Handset

Screws with Plugs (2)

Screws
(Not used for the FAX-L300)

Handset Cradle
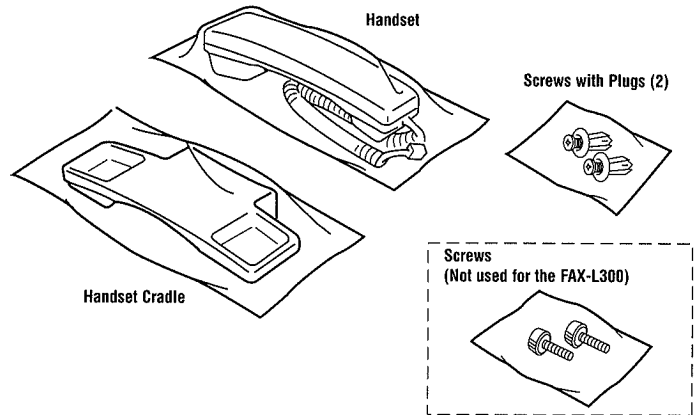
The two screws with a plastic white head are not for use with this fax model. You only need the two screws with plugs provided.

## Attaching the Handset to the Fax

To attach the handset to the FAX-L300 fax, follow these steps:

**1** Use a screwdriver to remove the two covers on the left side of the fax unit.
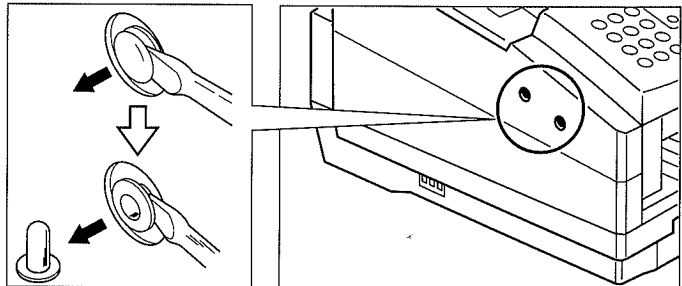
**2** Remove the plugs from the screws and insert them in the holes on the handset cradle.
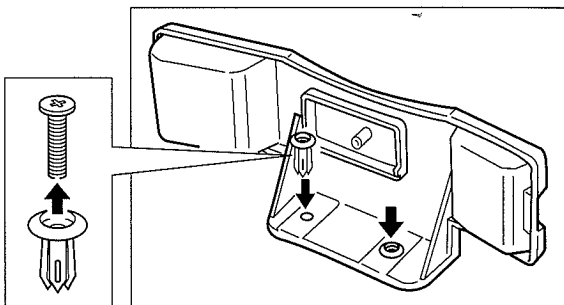
**3** Insert the plugs with the handset cradle in the holes on the fax.
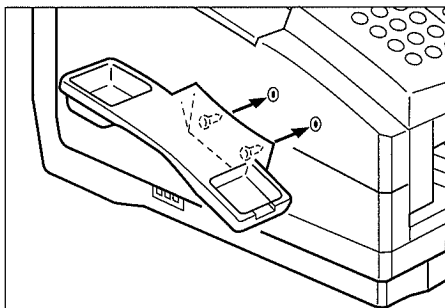
**4** Insert the screws into the plugs and push them in with your finger.
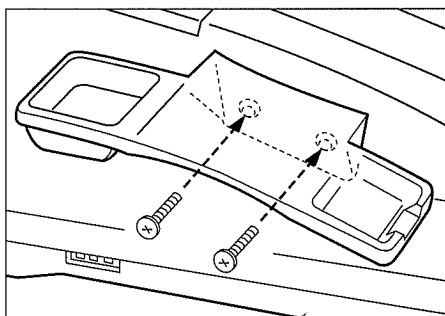
✔ If you can't push the screws in with your finger, use a Phillips screwdriver.

**5**   Connect the handset cord to the input jack marked ✆ on the left side of the fax.
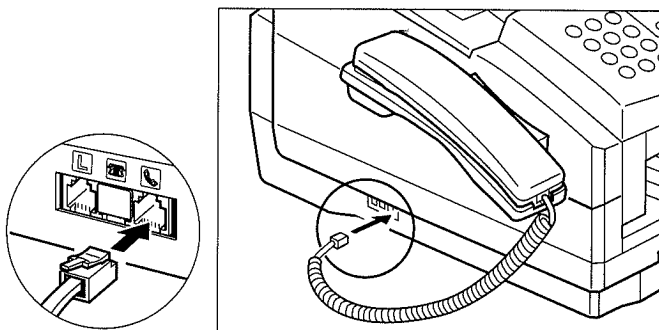
⚠   When carrying the fax unit, do not lift it by the handset cradle as it may break.
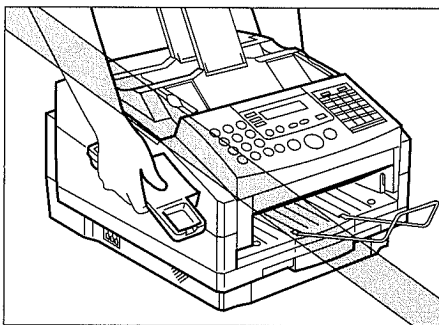
# Memory Board

You may want to increase your fax's memory if you send, receive or copy a lot of complex graphics. You can increase the fax's memory by adding a 2MB memory board.
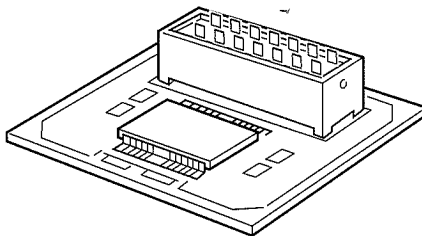


- Before touching the memory board, remove any static electricity from your hands by touching a grounded metal object. Static electricity can damage the memory board.

- Hold the edges of the memory board. Do not touch the delicate electronic circuitry with your fingers.
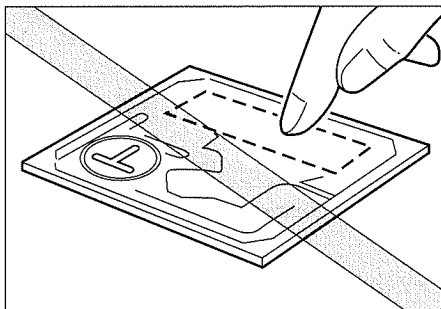
# Installing the Memory Board

To install the memory board in the FAX-L300 fax, follow these steps:

✔
- Make sure the MEMORY lamp is off. If it is on, refer to page 5-21 for instructions on printing the documents in memory.
- Remove any documents or printed pages from the fax before installing the memory board.
- If documents remain stored in memory when the memory board is installed, the fax will print out the Memory Clear report when the fax is next plugged in.

**1** Unplug the fax.

**2** Remove the document support for scanned documents from the fax.
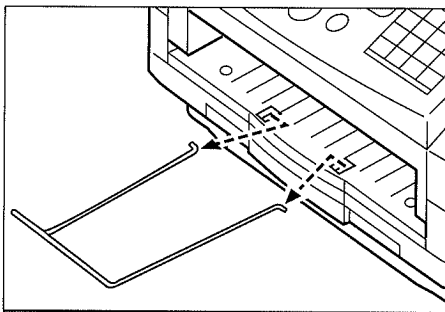
**3** Use the front cover release latch to open the front cover.
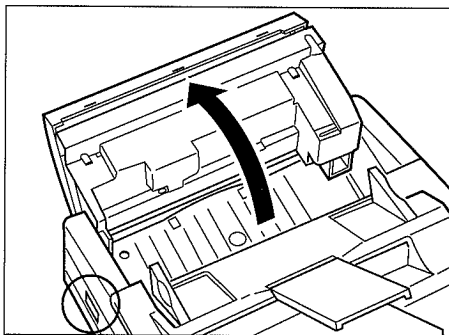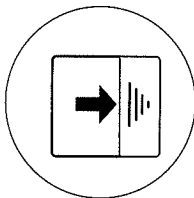
**4** Remove the two screws on the inner cover.
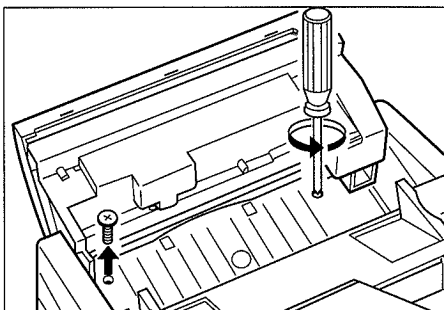
**5** Close the front cover.
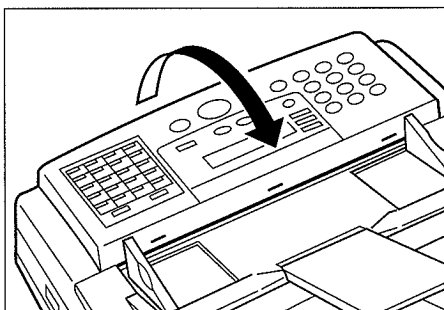
**6** Lift the inner cover slightly and remove it from the fax.
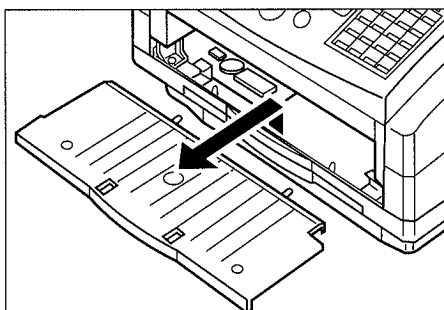
**7** Open the front cover again.

**8** Remove the 0.5 MB memory board already installed in the unit.
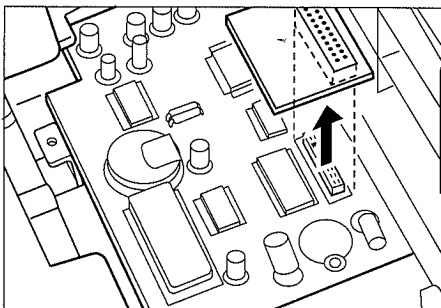


- Before touching the memory board, remove any static electricity from your hands by touching a grounded metal object. Static electricity can damage the memory board.
- Hold the edges of the memory board. Do not touch the delicate electronic circuitry with your fingers.
- When removing/connecting the memory board, be careful not to touch the components around the connector on the fax.

**9** Hold the edges of the memory board and connect it to the connector.



Connector
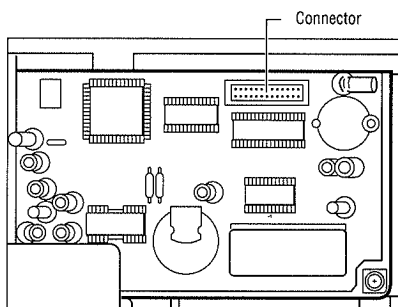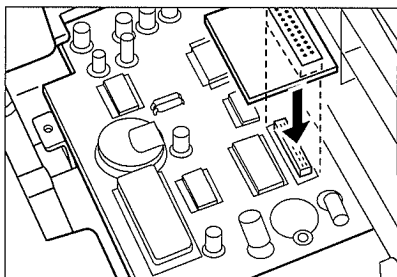


Top view

**10** Replace the inner cover by holding the front cover horizontal and inserting the tabs on the inner cover into the slots on the fax.
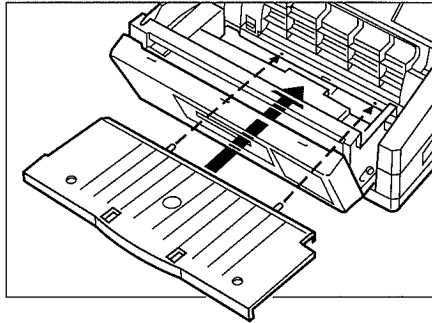


**11** Replace the screws.

**12** Plug in the fax and make sure it is working properly.

**13** Print the User's data list as described on page 6-7, and check the memory amount. It should say "TOTAL FAX MEMORY: 2.156 MB."

# Glossary

**auto halftone**

Auto halftone automatically distinguishes between the text areas and halftone areas (photographs, etc.) of a document, and scans accordingly. For text areas of a document, the fax scans faster, and for halftone areas, it scans more precisely. However, if the ground colour of the document is dark, the transmission speed will be slower.

**automatic dialling**

Dialling numbers at the press of one or a few buttons. To use automatic dialling, you must register the numbers in the fax's memory. The fax has three types of automatic dialling:

- **One-Touch Speed Dialling:** Allows you to dial by pressing a single button.

- **Coded Speed Dialling:** Allows you to dial by pressing the **CODED DIAL** button and then entering a two-digit code.

- **Group Dialling:** Allows you to dial a group of numbers by pressing a single button.

**automatic image reduction**

The fax can print the date, time, company name, and a fax number at the top of the faxes it receives. To prevent this information from crowding the faxed image off the page and onto the next (thus possibly lengthening the fax), the fax automatically reduces the size of the image on the page.

**automatic redialling**

When the receiving fax machine is busy or does not answer, or when an error occurs while sending, the fax waits 2 minutes and then automatically redials the number. If the receiving fax is still busy or doesn't answer, the fax waits another two minutes and dials again. If the fax doesn't go through again, the fax prints an activity report.

**bps**

*Bits per second.* Refers to the speed with which a fax machine sends and receives data.

**Coded Speed Dialling**

Allows you to dial a fax number by pressing the **CODED DIAL** button and entering a two-digit code. The fax can store up to 100 fax numbers for Coded Speed Dialling.

**delayed transmission**

The fax can scan in a document for sending to one or more numbers at a later, preset time.

**document**

The sheet of paper that you want to send through the fax.

**document density**

The lightness or darkness of the faxes, which can be controlled through the fax's settings.

**dual access**

Enables the fax to receive a fax, even if it is already copying or printing. Also enables you to load other faxes into memory, make copies, print out reports, print documents or register information while the fax sends a fax from memory.

**ECM**

*Error Correction Mode.* Reduces system and line errors when sending or receiving from fax machines that have ECM capability. When using ECM, the fax checks each page of incoming or outgoing faxes for lost data; when it finds data that has been lost from a portion of a page, the fax transmits that portion again after confirming that all data within that portion can be transmitted successfully.

| | |
|---|---|
| **FAX/TEL auto switch over** | This feature automatically detects whether a call is from a fax machine or a telephone. If the call is from a fax machine, the fax is automatically received; if the call is from a telephone, the fax rings and you can answer the call using the handset. This feature allows the fax to use a single line for both fax and phone calls, and also enables you to use these variations: |

- **Voice answering:** When the fax receives a call, it responds with a built-in voice message: *"You are connected. Please hold,"*
- **Ring back tone:** While the fax rings, the fax sends an artificial ring back tone to the caller.
- **Silent reception:** The fax receives faxes without ringing.

| | |
|---|---|
| **Group Dialling** | Allows you to dial up to 119 One-Touch Speed Dialling or Coded Speed Dialling numbers at once, with the press of a single button. |
| **manual receiving** | A method of receiving faxes in which you answer all incoming calls using the handset, and receive faxes by pressing ◇ (**START/COPY**) and then hanging up the handset. |
| **manual sending** | A method of sending faxes in which you dial the number, you speak with the other party and then press ◇ (**START/COPY**) to begin sending the document. Use manual sending if the memory is full, but you still want to send a document. Manual sending scans and sends one page at a time. The document is not scanned into the memory, so it takes a little more time to get your original document back. |
| **memory broadcast** | Allows you to send a scanned fax to as many as 121 locations at once, using a combination of One-Touch Speed Dialling, Coded Speed Dialling, or regular dialling. |
| **memory list** | Shows the faxes stored in the fax's memory, along with the following information for each: |

- Transaction number
- How the fax was stored
- Name and number the fax was sent to (for One-Touch Speed Dialling or Coded Speed Dialling)
- Number of pages
- Date and time each document was stored in the memory and when it will be sent
- Any errors that occurred when sending the document

| | |
|---|---|
| **memory sending** | A method of sending faxes in which you scan the document into the memory before the fax dials the number and sends the fax. Compare *manual sending*. |
| **One-Touch Speed Dialling** | Allows you to dial a fax number by pressing a single One-Touch Speed Dialling button. The fax can store up to 20 fax numbers for Coded Speed Dialling. |
| **PAUSE** | Pressing the **PAUSE** button enters a pause between digits of a telephone number. |
| **polling** | One fax machine requesting another to send a document. The receiving party calls the fax machine holding the document to be sent, and requests that it be sent. |

| | |
|---|---|
| **quick-on-line sending** | After a document is set in the automatic document feeder (ADF), the fax begins to scan the entire document into the memory. As the first page of a multiple document is being scanned, your FAX-L300 will begin to call the other party, and transmit the information even as the remaining pages are being scanned. The fax scans the document quickly so you can get it back in a few moments and return to work. |
| **regular dialling** | Dialling a number by using the numeric buttons. |
| **remote receiving ID** | The number you can dial from an extension phone to start receiving a fax. |
| **remote reception** | Receiving a fax by answering the extension phone. You may have to dial a remote receiving ID number to start remote reception. |
| **reports** | A document printed by the fax and containing information about the faxes it has sent and received. |
| **sender ID** | Information printed at the top of a fax: |
| | • Date and time the fax was sent |
| | • Your fax/phone number |
| | • Your name |
| | • The other party's name |
| | • Page number |
| **sending speed** | The rate at which faxes are transmitted through the phone line. See also *bps*. |
| **smoothing** | A function that allows the fax to print high-resolution images. |
| **standby mode** | The mode the fax is in when not currently performing an operation. The display shows the date and time in this mode. |
| **timed sending** | See *delayed transmission*. |
| **TONE dialling button** | Enables you to switch temporarily from pulse to tone dialling. |
| **transaction number** | A unique number assigned to each fax sent (TX NO.) or received (RX NO.) by the fax, and used to identify that fax. |

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---

# S

# FAX-L350

# SERVICE MANUAL

## REVISION 0

| FAX-L350 | H12-1573 | 230V | EC |
|---|---|---|---|
| FAX-L350 | H12-1574 | 230V | UK |
| FAX-L350 | H12-1575 | 230V | GER |
| FAX-L350 | H12-1577 | 230V | FRN |
| FAX-L350 | H12-1578 | 230V | AUS |
| FAX-L350 | H12-1579 | 230V | AE |
| HANDSET APPARATUS | | | |

# Canon

**DEC. 1999**  **HY8-10AM-000**

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

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All documents and all page layouts were created with Adobe PageMaker®.

# I. MEANING OF MARKS

The marks used in this manual have the following meanings.

| Mark | Meaning |
|------|---------|
| ⚠ | States a precaution to be taken to prevent danger to personnel, damage to the product, or damage to electronic components by discharge of static electricity. for example. |
| ⚡ | States a precaution to be taken to prevent damage to electronic components by electrostatic discharge. |
| 🚫🔥 | Informs you of fire-related cautions. |
| 🔌 | Informs you that the plug must be removed from the power outlet before starting an operation. |
| NOTE | Gives useful information to understand descriptions. |
| REFERENCE | Indicates sections to be read to obtain more detailed information. |

# II. ABOUT THIS MANUAL

This manual is divided into five parts, and contains information required for servicing the product.

Each of the above parts is further divided into the following four chapters:

### Chapter 1:  General Description

This part explains product specifications and the how to service the unit safely.  It is very important, so please read it.

### Chapter 2:  Technical Reference

This part explains the technical theory of the product.

### Chapter 3:  Maintenance and Service

This part explains how to maintain the products for adjustment and troubleshooting and service operations and service switches.

### Chapter 4:  Appendix

This part explains the informations of the optional products and user data flow.

**REFERENCE**
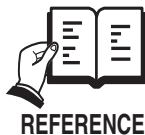
- For more details of user operations and user reports, see the separate volume of *USER'S GUIDE*.
- Procedure for assembly/disassembly and greasing points are not given in this manual.  See the illustrations in the separate volume of *PARTS CATALOG*.
- Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model.
  See *G3 Facsimile Service Data Handbook (supplied separately)* for details them.
- See the *G3 Facsimile Error Code List (Rev.1, supplied separately)* for details of the error codes not shown in this manual.
- Detailed description of connector Locations and Signal Descriptions in not given in this manual.
  See the *Circuit Diagram* for details them.

# III. REVISION HISTORY

| *REVISION* | *CONTENT* |
|:---:|:---|
| *0* | *Original* |

# IV. TABLE OF CONTENTS

## *Chapter 2: Technical Reference*

## *Chapter 3: Maintenance and Service*

## *Chapter 4: Appendix*

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# Chapter 1

# General Description

# 1. FEATURES

## 1.1 Overview

This product is a G3 tranceiving facsimile based on the ITU-T recommendation. It can be used in telephone networks.

### High image quality

Ultra-high quality image processing. Gives faithful reproduction of documents.

### Plain paper printing with LBP

The printer section uses an LBP which employs an on-demand fixing system, operating the fan and fixing heater only when printing, and prints on plain paper.

### Excellent print quality and speed

The FAX-L350 offers 600×600 dpi laser beam printing, providing you with high resolution text and graphics. The exceptional printing speed of 6 pages per minute allows you to work more effectively.

### Toner detection function

This unit uses a magnetic (permeability) sensor to detect remaining toner.

### Automatic dialing

There are 32 one-touch dial locations, and 100 coded-speed dial locations. Registered numbers can be retrieved using the telephone directory feature.

### Improved speed

This fax unit is equipped with the ITU-T standard V.34 mode which enables transmission speeds up to 33.600 bps ,more than double the rate of older G3 fax models.

### Improved data compression

JBIG, a new data compression method, compresses data to approximately one-fifth the block size attained with MMR data compression. The smaller block size requires less transmission time, and this means saving you time and money.´

### Memory reception

No need to worry about toner or recording paper running out in the middle of a reception. Received documents are stored in memory until they can be output later.

### Delayed transmission

Documents can be sent automatically, at a preset time. This means that documents can be sent late at night, thus reducing transmission costs.

# 2. SPECIFICATIONS

## 2.1 General Specification

| | |
|---|---|
| **Type** | Desktop |
| **Body colour** | Art gray |
| **Power source** | 180 ~ 264V AC, 45 ~ 65 Hz, |
| **Power consumption** | standby less than 7.5W / less than 495W (when operating) |
| **Usage environment** | 50.0°F ~ 90.5°F (10°C ~ 32.5°C), 20%~85% RH<br>Horizontal          ±3° or less |
| **Operating noise** | Measured in accordance with ISO standards<br>Standby          : 30 dB(A) or less<br>Operating          : 48 dB(A) or less |
| **Dimensions (W × D × H)** | 14.96" × 19.02" × 11.95" (380 mm × 483 × 303.5 mm)<br>(Not including Trays) |
| **Weight** | 28.66 lbs (13 kg)     Including trays |

## 2.2 Communication Specification

| | |
|---|---|
| **Applicable lines** | PSTN (Public Switched Telephone Network)<br>PBX (Private Branch Exchange) |
| **Handset** | CT-19 (option) |
| **Transmission method** | Half-duplex |
| **Transmission control protocol** | ITU-T T30 binary protocol/ECM protocol |
| **Modulation method** | |
| **G3 image signals** | ITU-T V.27ter (2.4k, 4.8k bps)<br>ITU-T V.29 (7.2k, 9.6k bps)<br>ITU-T V.33 (12k, 14.4k bps)<br>ITU-T V.17 (TC7.2k, TC9.6k, 12k, 14.4k bps)<br>ITU-T V.34 (2.4k, 4.8k, 7.2k, 9.6k, 12k, 14.4k, 16.8k, 19.2k,<br>21.6k, 24k, 26.4k, 28.8k, 31.2k, 33.6k bps) |
| **G3 procedure signals** | ITU-T V.21 (No.2) (300bps)<br>ITU-T V.8,V34 (300, 600, 1200 bps)<br>(With automatic fallback function) |
| **Coding** | ITU-T T.4 Coding method (MH, MR)<br>ITU-T T.6 Coding method (MMR)<br>ITU-T T.82/T.85 Coding method (JBIG) |
| **Error correction** | ITU-T T30 (ECM) |
| **Canon express protocol (CEP)** | None |

**Time required for transmission protocol**

| Mode | Pre-message Protocol *1 | Post-message Protocol *2 (between pages) | Post-message Protocol *3 (after pages) |
| --- | --- | --- | --- |
| T.30 Standard | approx. 12 sec. | approx. 4 sec. | approx. 3.5 sec. |
| V.34 JBIG | approx. 9 sec. | approx. 1 sec. | approx. 1 sec. |

*1 Time from when other facsimile is connected to the line until image transmission begins.

*2 Post-message (between pages): Time from after one document has been sent until transmission of the next document starts if several pages are transmitted.

*3 Post-message (after last pages): Time from after image transmission is completed until line is switched from facsimile to telephone.

| | |
| --- | --- |
| **Minimum transmission time** | 10 msec. (MH,MR), 0 msec. (MMR) |
| **Transmission output level** | from -15 to 0 dBm |
| **Receive input level** | from -43 to -3 dBm |
| **Modem IC** | R288F |

## 2.3 Scanner Specification

| | | |
| --- | --- | --- |
| **Type** | Sheets | |
| **ADF capacity** | Max. 30 sheets (A4/Letter) | |
| | Max. 20 sheets (Legal) | |
| **Effective scanning width** | Letter/Legal | 8.42" (214 mm) |
| | A4 | 8.19" (208 mm) |
| **Scanning method** | Contact sensor scanning method | |
| **Scanning line density** | | |
| Horizontal: | | 8 dot/mm (203.2 dpi) / 16 dot/mm (406.4 dpi) |
| Vertical: | Standard | 3.85 line/mm (97.79 dpi) |
| | Fine | 7.7 line/mm (195.58 dpi) |
| | Superfine/Ultrafine | 15.4 line/mm (391.16 dpi) |
| **Scanning speed** | Standard | 5 sec./page |
| | Canon FAX Standard Chart No. 1 scanning | |
| **Image modes** | Halftone (PHOTO mode) | |
| **Scanning density adjustment** | 3 density level | |
| **Halftone** | 64-gradation error diffusion system (UHQ) | |

## Scanning range

Sheet dimensions (W × L)

| | |
|---|---|
| Maximum | 8.58" ×14.41" (218 mm × 336 mm) |
| Minimum | 3.5" ×1.75" (88.9 mm × 63.5 mm) |
| Thickness | |
| multiple pages: | 0.002" ~ 0.005" (0.06 mm ~ 0.13 mm) |
| | 40~90 g/m$^2$ |
| 1 pages: | 0.002" ~ 0.017" (0.06 mm ~ 0.43 mm) |
| | 34.7~340 g/m$^2$ |

Document leading edge

Left margin          Right margin

Effective scanning width

**SCANNING DROP OUT RANGE**          Top margin

**SCANNING RANGE**          Effective scanning length

Bottom margin

Document trailing edge
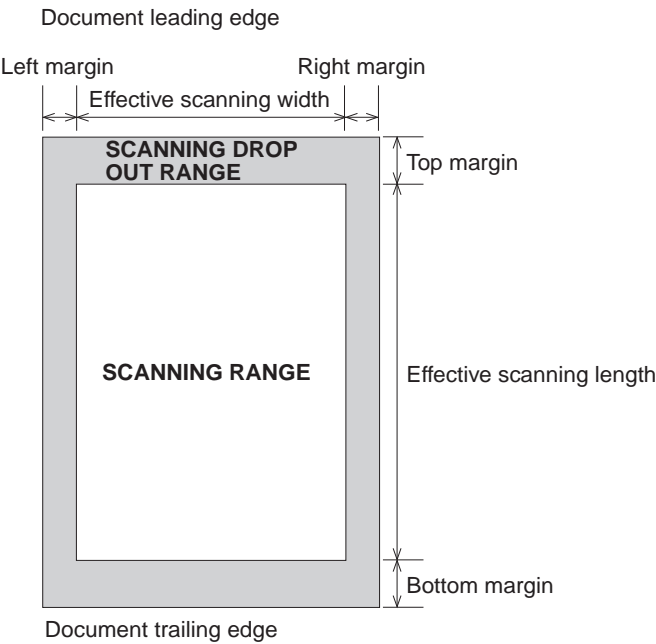
### Figure 1-1 Scanning Range

| Item | A4 | Letter | Legal |
|---|---|---|---|
| Effective scanning width | 8.19" | 8.42" | 8.42" |
| | (208 ±1.0 mm) | (213.9 ±1.0 mm) | (213.9 ±1.0 mm) |
| Effective scanning length | 11.53"±0.12" | 10.84"±0.12" | 13.84"±0.12" |
| | (293 ±3.0 mm) | (275.4 ±3.0 mm) | (351.6 ±3.0 mm) |
| Left margin | 0.04" ±0.08" | 0.04" ±0.08" | 0.04" ±0.08" |
| | (1.0 ±2.0mm) | (1.0 ±2.0mm) | (1.0 ±2.0 mm) |
| Right margin | 0.04" ±0.10" | 0.04" ±0.10" | 0.04" ±0.10" |
| | (1.0 ±2.5 mm) | (1.0 ±2.5 mm) | (1.0 ±2.5 mm) |
| Top margin | 0.08" ±0.08" | 0.08" ±0.08" | 0.08" ±0.08" |
| | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) |
| Bottom margin | 0.08" ±0.08" | 0.08" ±0.08" | 0.08" ±0.08" |
| | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) |

Units are inches with mm shown in parentheses.

• Document scanning width "**A4/LTR**" is set in service data #1 SSSW SW06, bit4.
• Skew area is not taken into consideration.
• The feed precision of the original is included in the scanning range values.

**NOTE**

## 2.4 Printer Specification

| | |
|---|---|
| **Printing method** | LASER Beam Printer |
| **Printing Cartridge** | |
|   Products name | Canon FX3 Cartridge |
|   Product code | H11-6381-001 |
|   Valid period | Displayed on carton (2.5 years from date of manufacture) |
|   Storage conditions | Temperature     from 32.0°F to 95.0°F (0°C to 35°C) |
| | Humidity     from 35% to 85% RH |
|   Yield | Approx. 2700 pages (black rate 4% chart) |
| **Toner detection** | Yes (Toner out detect ) |
| **Printing speed** | Approx. 6 pages/minute |
| **Printing resolution** | Standard     8 dots/mm × 3.85 line/mm |
| | Fine     8 dots/mm × 7.7 line/mm |
| | Superfine     8 dots/mm× 15.4 line/mm |
| | Ultrafine     16 dots/mm × 15.4 line/mm |
| **Paper output tray stacking (when using the recommended paper)** | |
|   Face down delivery slot | Approx. 50 sheets |
|   Face up delivery slot | 1 sheet |
| **Paper tray** | |
|   Paper supply method | ASF (Auto Sheet Feeder) |
|   Kind of paper tray | MULTI-PURPOSE TRAY |
|   Paper capacity | Max. 0.40" (10 mm) thickness |

| | Plain Paper | Lavel Paper | Envelopes | Transparency |
|---|---|---|---|---|
| MULTI-PURPOSE TRAY | Approx. 100 sheets | Approx. 70 sheets | Approx. 7 envelopes | 1 sheet |

**Paper cassette capacity**

  1.08" (27.5 mm) or less in stacking height (Approx. 250 sheets)

**Recommended paper**

KANGAS

| | |
|---|---|
|   Weight | 80 g/m$^2$ |
|   Paper size | A4 |
|   Manufactured by | KANGAS |

NEUSIEDLER Canon Paper

| | |
|---|---|
|   Weight | 80 g/m$^2$ |
|   Paper size | A4 |
|   Manufactured by | NEUSIEDLER |

### Printing range

Paper dimensions (W × L)

| | |
|---|---|
| Maximum | 8.50" × 14.02" (216 mm × 356 mm) |
| Minimum | 3.64" × 5.0" (92.4 mm × 127 mm) |
| Letter | 8.50" × 10.98" (216 mm × 279 mm) |
| Legal | 8.50" × 14.02" (216 mm × 356 mm) |
| A4 | 8.27" × 11.69" (210 mm × 297 mm) |

Thickness

| | |
|---|---|
| MULTI-PURPOSE TRAY | 64~90g/m$^2$ |
| MANUAL FEED SLOT | 64~105g/m$^2$ |
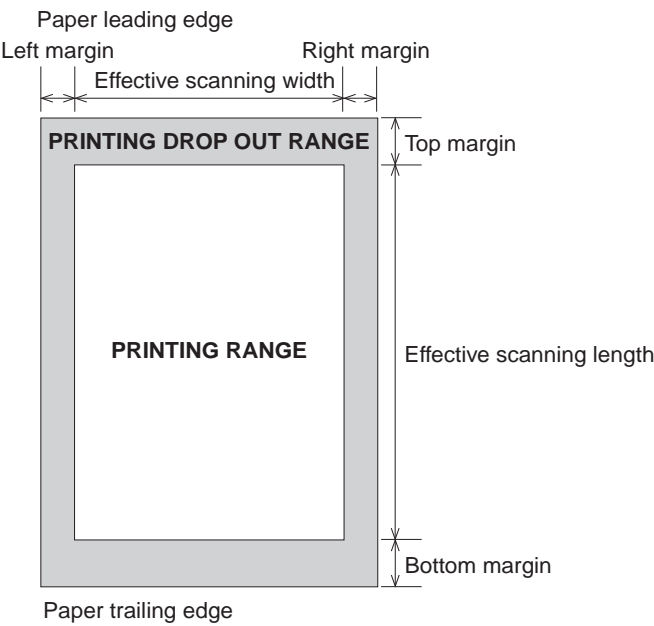


**Figure 1-2 Printing Range**

| Item | A4 | Letter | Legal |
|---|---|---|---|
| Effective printing width | 8.11" ±0.08" | 8.19" ±0.08" | 8.19" ±0.08" |
| | (206 ±2.0 mm) | (207.9 ±2.0 mm) | (207.9 ±2.0 mm) |
| Effective printing length | 11.38" ±0.12" | 10.69" ±0.12" | 13.69" ±0.14" |
| | (289 ±3.0 mm) | (271.4 ±3.0 mm) | (347.6 ±3.5 mm) |
| Left margin | 0.08" ±0.08" | 0.16" ±0.08" | 0.16" ±0.08" |
| | (2.0 ±2.0 mm) | (4.0 ±2.0 mm) | (4.0 ±2.0 mm) |
| Right margin | 0.08" ±0.12" | 0.16" ±0.12" | 0.16" ±0.12" |
| | (2.0 ±3.0 mm) | (4.0 ±3.0 mm) | (4.0 ±3.0 mm) |
| Top margin | 0.08" ±0.08" | 0.08" ±0.08" | 0.08" ±0.08" |
| | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) | (2.0 ±2.0 mm) |
| Bottom margin | 0.24"±0.16" | 0.24"±0.16" | 0.24"±0.18" |
| | (6.0 ±4.0 mm) | (6.0 ±4.0 mm) | (6.0 ±4.5 mm) |

Units are inches with mm shown in parentheses.

**NOTE**
- The header is printed in the printing range.
- Skew area is not taken into consideration.
- The feed precision of the original is included in the scanning range values.
- Print area when all-black pattern from Test Print modes are outputted.

## 2.5 Copy Specifications

| | | |
|---|---|---|
| **Color copy** | None | |
| **Multiple copy** | 99 copies | |
| **Copy resolution** | Scanning | 600 dpi × 600 dpi (direct copy) |
| | | 300 dpi × 600 dpi (memory copy) |
| | Printing | 600 dpi × 600 dpi |
| **Copy magnification ratio** | 100%, 90%, 80%, 70% | |

**NOTE**

- When one copy is specified at a magnification ratio of 100%, the direct copy mode is entered. When two or more copies are specified, the memory copy mode is entered.
- When the magnification ratio is 90%, 80% or 70%, the memory copy mode is entered.
- When long originals are scanned in the direct copy mode, only the area that can be printed on a single page is copied, and copies are not made over multiple pages.

## 2.6 Interface Specifications

The parallel interface sends 8 bits (one byte) of data at one time and is transistor-transistor-logic (TTL) compatible.

**Interface type**
   IEEE P1284/Bi-directional parallel

**Data transmission**
   8-bit parallel interface (IBM PC or compatible)

**Synchronizing signal**
   STROBE signal from the computer

**Handshake**
   BUSY/ACKNLG

**Interface connectors**
   Printer side                    Amphenol 57-40360 or equivalent
   Cable side                      Amphenol 57-30360 or equivalent

**Recommended interface cable**
   Type                            Twisted-pair shielded cable
   Material                        AWG No.28 or larger
   Length                          Up to 6.56 feet (2.0 m)

**Signal voltage levels**
   Low level                       0.0 V to +0.4 V
   High level                      +2.4 V to +5.0 V

## 2.7 Function

**Dialling**

| | |
|---|---|
| Manual dialling | Numeric button |
| Auto dialing | Max. 120 digits (Ave. 39 digits) |
| | One-touch: 32 |
| | Coded speed: 100 |
| Group dial | Max. 131 locations |
| Redial | Numeric button redial function (Max. 120 digits) |

**Transmission**

| | |
|---|---|
| Broadcast transmission | Max. 133 locations (One-touch:32, Coded speed:100, Numeric button:1) |
| Delayed transmission | No. of Destination Max. 133 |
| | No. of Reservation Max. 20 |
| Confidential Tx/Rx | Yes (by Subaddress Sending) |
| Relay broadcasting originating | Yes (by Subaddress Sending) |
| Password/Subaddress sending | Max. 20 digits |

**Reception**

| | |
|---|---|
| FAX/TEL switching | Yes |
| Method | CNG detection |
| Message | None |
| Pseudo CI | None |
| Pseudo ring | Yes |
| Pseudo ringback tone | Yes |
| Reduction settings for reception | Yes |
| Automatic reduction of reception images | Yes (100%~70%) |
| Built-in Answering machine | None |
| Answering machine connection | Yes (Telephone answering priority type) |
| Remote reception | Yes (Remote ID method) |
| Memory lock reception | None |
| Reception printing in reverse order | Yes (When using face-down delivery slot) |

**Polling**

| | |
|---|---|
| Polling transmission | Yes |
| | The document is accumulated into the memory ahead of time, then transmitted when there is a polling request from the other party. |
| Polling reception | Yes |
| | Receives from a fax in automatic transmission mode |
| Subaddress (ITU-T standard) | Max. 20 digits |
| Password (ITU-T standard) | Max. 20 digits |

**Others**

**Dual access**

| | |
|---|---|
| File No. of reservation | Max. 20 files |

**Closed network**　None

**Direct mail prevention**

| | |
|---|---|
| Telephone numbers compared | Telephone numbers registered under one-touch and coded speed dial, and aTSI signal |
| Number of digits | Lower 6 digits (number of digits can be changed with service data #3) |

**Memory box**　None

**Memory backup**

| | |
|---|---|
| Backup contents | Dial registration data, User data, Service data, Time |
| Backup IC | 218160 bit SRAM for control (with built-in CPU) |
| Backup device | Lithium battery 3 V DC/ 220 mAh |
| Battery life | Approx. 5 years |

**Image data backup**

| | |
|---|---|
| Backup contents | Memory reception, memory copy, delayed transmission and broadcast transmission image data, activity management report |
| Backup IC | 2.5 M byte DRAM |
| Backup device | Rechargeable capacitor 2.5 V/4F |
| Battery life | 40 cycles with 100 % discharge (Temperature 77°F (25°C) |

**Activity management**　Yes

**a) User report**

Activity report (Every 20 transactions: always transmission and reception together)
Activity report (sending/receiving)
One-touch speed dialing list
Coded speed dialing list
Group dialing list
User's data list
Error report
Memory clear list
Multi activity report
Document memory list

**b) Service report**

System data list
System dump list
Error list

**Transmitting terminal identification**　Yes

**Time**

| | |
|---|---|
| Management data | Year/month/date/day/hour/minute (24 hourdisplay) |
| Precision | ±60 sec per month |

**Display**　2 row × 20 digits
**Completion stamp**　None
**Program key**　None
**Demo print function**　None
**HELP function**　None

# 3. OVERVIEW

## 3.1 External View

### *Front View*



SUPPORT TRAYS

PAPER REST

MULTI-PURPOSE TRAY

AUTOMATIC DOCUMENT FEEDER (ADF)

PAPER GUIDE

RELEASE LATCH

DOCUMENT GUIDES

FACE-DOWN DELIVERY SLOT

OPERATION PANEL

FRONT COVER

PAPER DELIVERY SELECTOR

FACE-UP DELIVERY SLOT

PAPER CASSETTE

EXTENSION TRAY
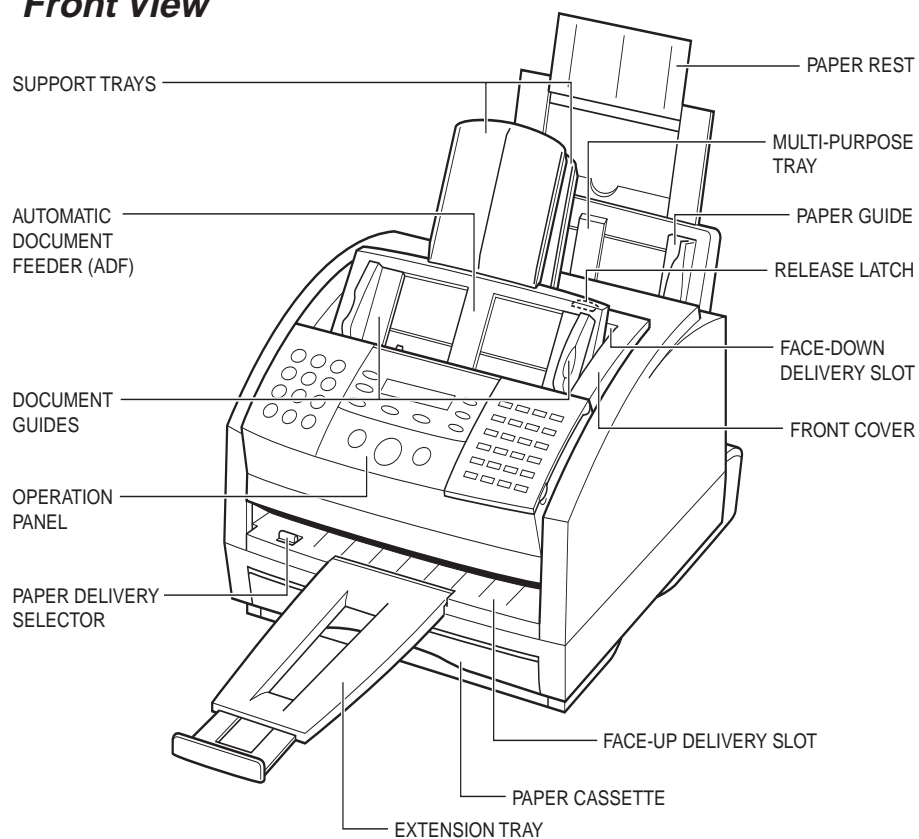
**Figure 1-3 External View (1)**

## *Inside View*

FX-3 TONER CARTRIDGE
COMPARTMENT

TRANSFER CHARGING
ROLLER

PAPER RELEASE
LEVER

FIXING ASSEMBLY

FRONT COVER

## *Rear View*

REAR COVER

POWER
CONNECTOR

BI-DIRECTIONAL
PARALLEL PORT

TELEPHONE LINE JACK

EXTENSION PHONE JACK

HANDSET JACK
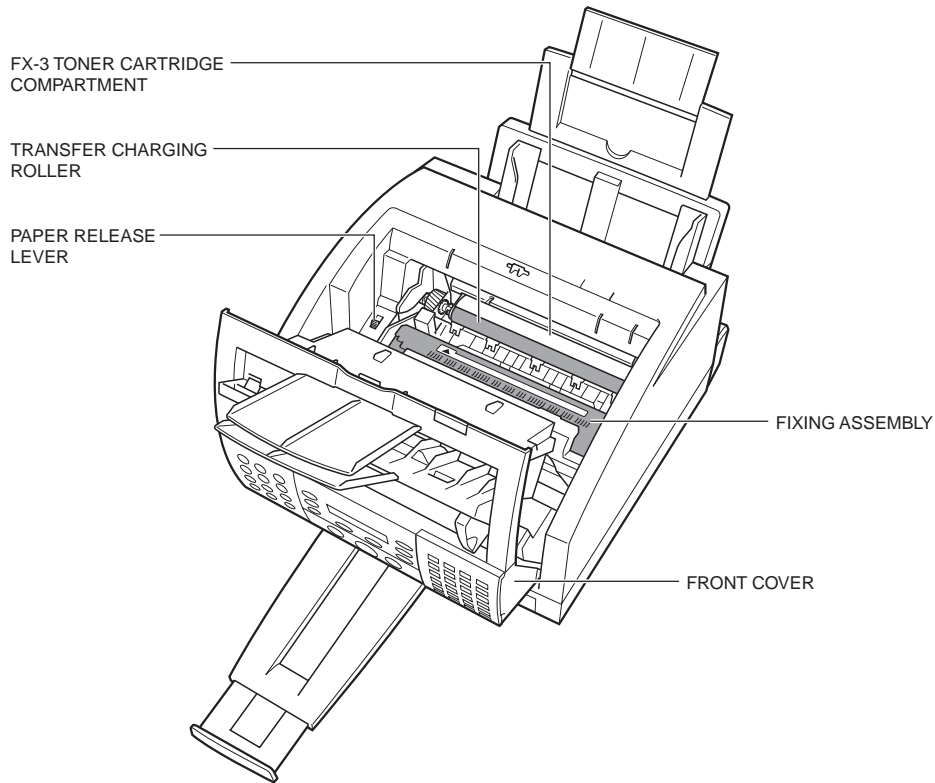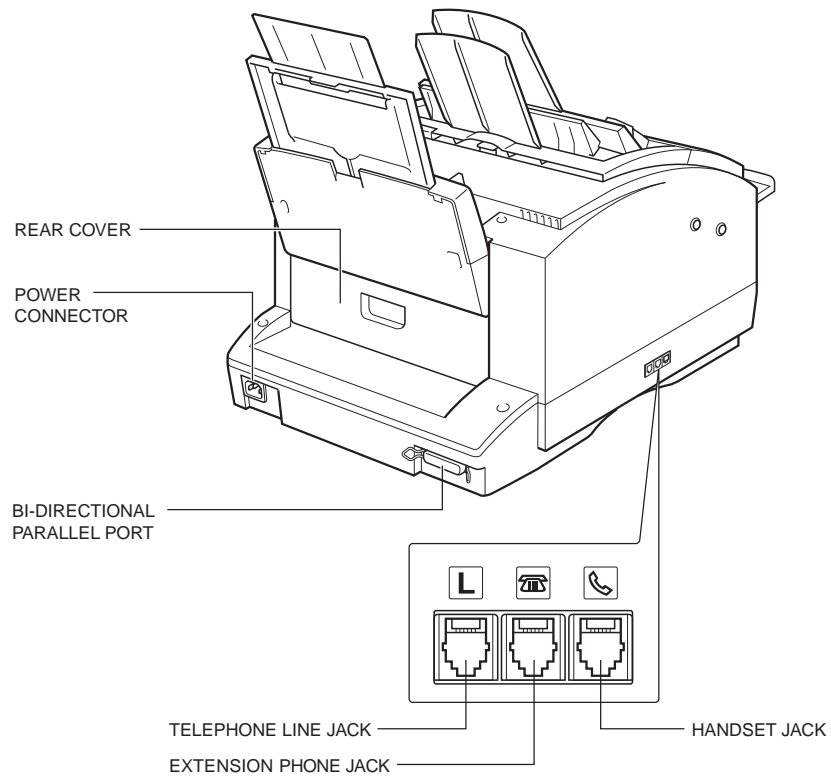
**Figure 1-4 External View (2)**

**1-11**

### 3.2 Operation Panel

## *The Operation Panel*



❹LCD display
❸ Document feed lever
❺ In Use/Memory lamp
❷ R button
❻ Alarm lamp
❶ Coded Speed Dial/ Directory button
❼ One-Touch Speed Dial buttons

❽ Numeric buttons
❾ Redial/Pause button
❿ (Hook) button
⓫ Receive Mode button
⓬ ◇ (Start/Copy) button
⓭ Resolution button
⓮ (Stop) button
⓯ Set button
⓰ One-Touch Speed Dial panel
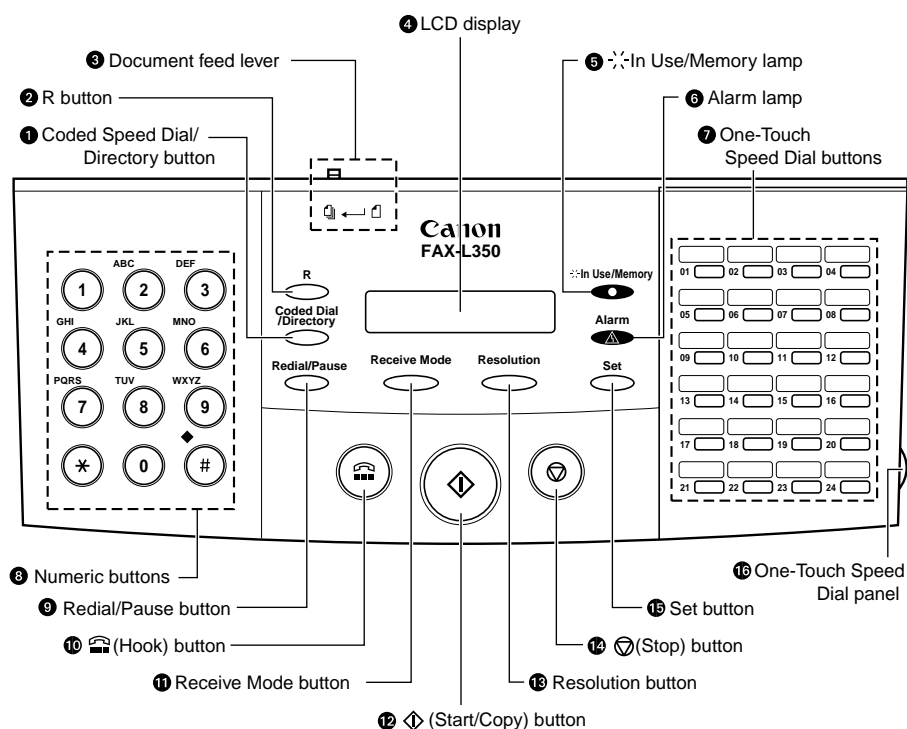
❶ **Coded Dial/Directory button**

Press this button to dial a fax/telephone number that you have registered for coded speed dialing, or to look up the other party's name and retrieve the number for dialing.

❷ **R button**

Press this button to dial an outside line access number when the unit is connected through a switchboard (PBX).

❸ **Document feed lever**

Set this lever to the left ( ) for automatic document feed, or to the right ( ) for manual document feed.

❹ **LCD display**

The LCD display shows messages and prompts during operation, and displays selections, text, numbers and names when registering information.

**Figure 1-5 Operation Panel (1)**

**5** ☼ **In Use/Memory lamp**

Lights when the telephone line in being used or a document has been received in memory

**6** **Alarm lamp**

This lamp flashes when an error occurs, or when the FAX-L350 is out of paper or toner.

**7** **One-Touch Speed Dial buttons**

Use these buttons for One-Touch Speed dialing.

**8** **Numeric buttons**

Use these buttons to enter numbers and names when registering information, and to dial fax/telephone numbers that are not registered for automatic dialing.

**Redial/Pause button**

Press this button to redial the last number that was dialed using the numeric buttons, orto enter pauses between digits when dialing or registering fax numbers.

**10** ☎ **(Hook) button**

Press to dial with the numeric buttons when using manual sending.

**11** **Receve Mode button**

Use this button to select the receive mode for reciving faxes.

**12** ◇ **(Start/Copy) button**

Press this button to begin faxing, or copying.

**13** **Resolution button**

Press this button to select the resolution the FAX-L350 will use for the document you want to fax, or copy.

**14** ▽ **(Stop) button**

Press this button to cancel sending, receiving, or any other operation.

**15** **Set button**

Press this button to select a menu item when registering information.

**16** **One-Touch Speed Dial panel**

Open this panel to access the registration buttons.

**Figure 1-6 Operation Panel (2)**

### Special Function Buttons (One-Touch Speed Dial panel open)
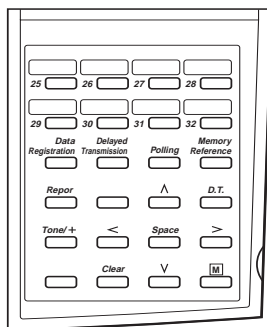


❏ **Data Registration button**

Use this button to register user's data, speed dialing, and other important settings for sending and receiving.

❏ **Delayed Transmission button**

Press this button to register a time for delayed sending.

❏ **Polling button**

Use this button to set a document for polling sending, and to poll the other fax to receive a document.

❏ **Memory Reference button**

Use this button to delete or esend documents stored in memory, or to print a list of documents in memory

❏ **Report button**

Use this button to print activity reports.

❏ **D.T. button**

Press this button to cofirm the dial tone when dialing a number. (Not used in the UK, Hong Kong, Australia, New Zealand, Singapore, or Malaysia.)

❏ **Tone/+ button**

Press this button to use tone dialing temporarily when your unit is set for pulse dialing. Press also to enter a + sign when registering your fax/telephone number.

❏ **Space button**

Use this button to enter a space between letters and numbers when you are registering information.

❏ **Clear button**

Use this button to clear an entire entry during information registration.

❏ ∧ ∨ **Search buttons**

Use these buttons to scroll the display so you can see other options and selections in the menus during data registration.

❏ ＜＞ **Cursor buttons**

Use these buttons to move the cursor left or right during data registration.

❏ **M button (UK only)**

In the U.K., if you wish to use the UK Call, Global Call, and Day Call Services of Cable and Wireless Communication Ltd., use this button.

**Figure 1-7 Operation Panel (3)**

### 3.3 Option

Handset Kit

### 3.4 Consumable

**Toner cartridge**

FX3 cartridge is used.

# 4. DIMENSIONS

TOP

SIDE VIEW

BOTTOM VIEW
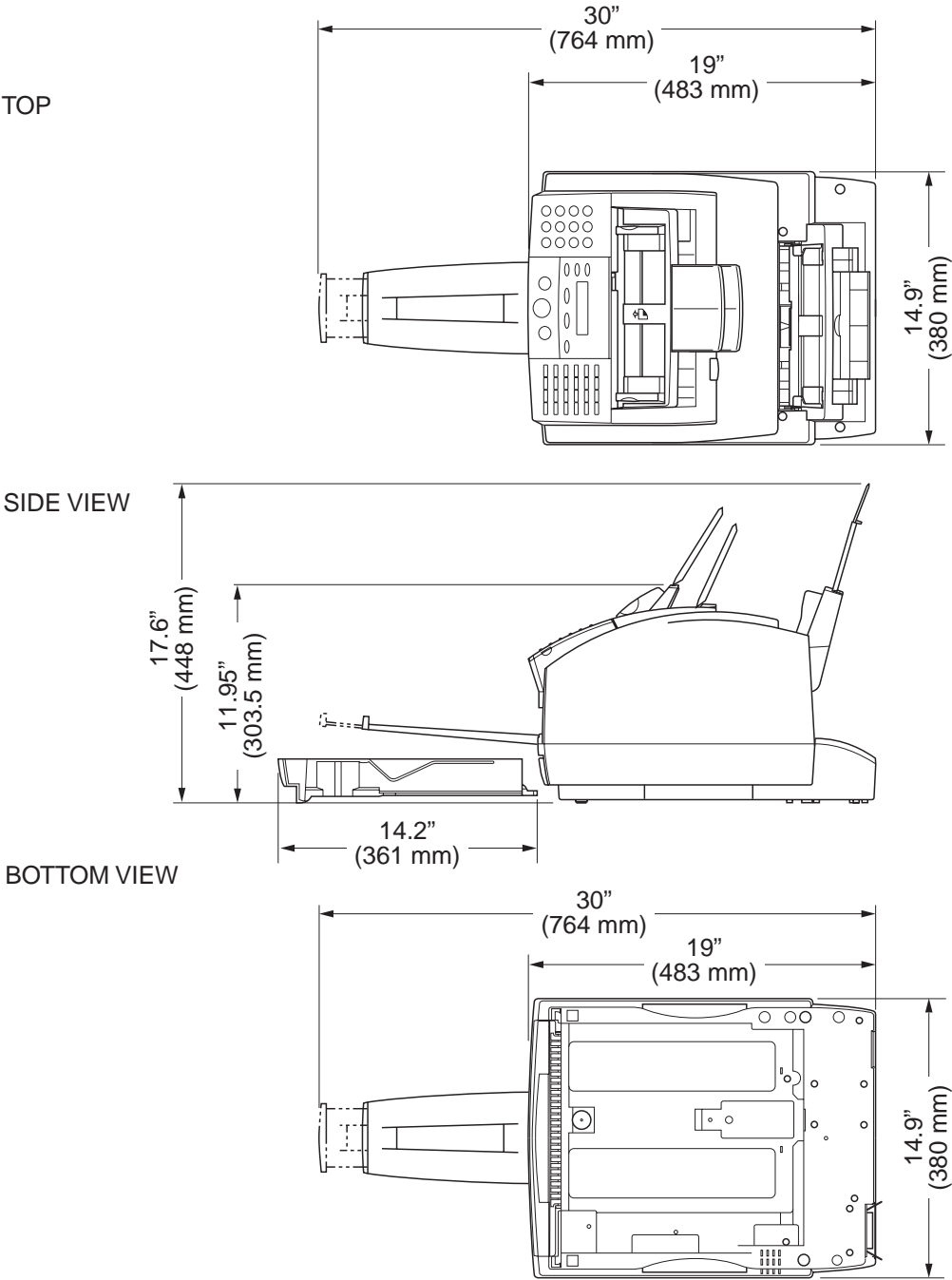
**Figure 1-8 Dimensions**

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# 5. SAFETY & PRECAUTIONS

## 5.1 Personnel Hazards
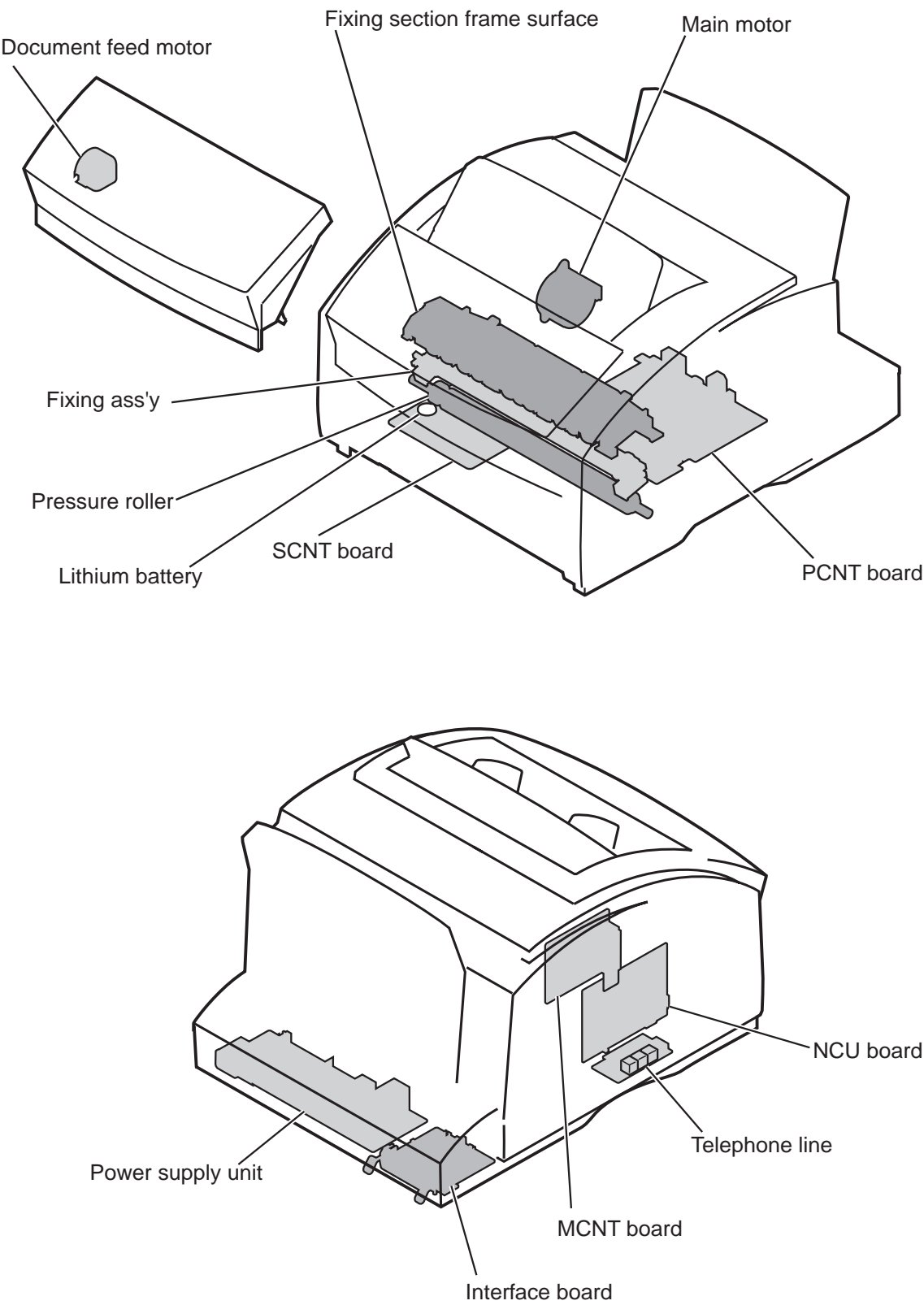


**Figure 1-9 Personnel Hazards (1)**

**1-18**

Document feed roller

Separation roller

Main motor

Document eject roller

Document feed motor

Paper face-down eject roller

Transfer charging roller

Paper face-up eject roller

Pickup roller

Paper feed roller

Pickup roller

Paper feed roller
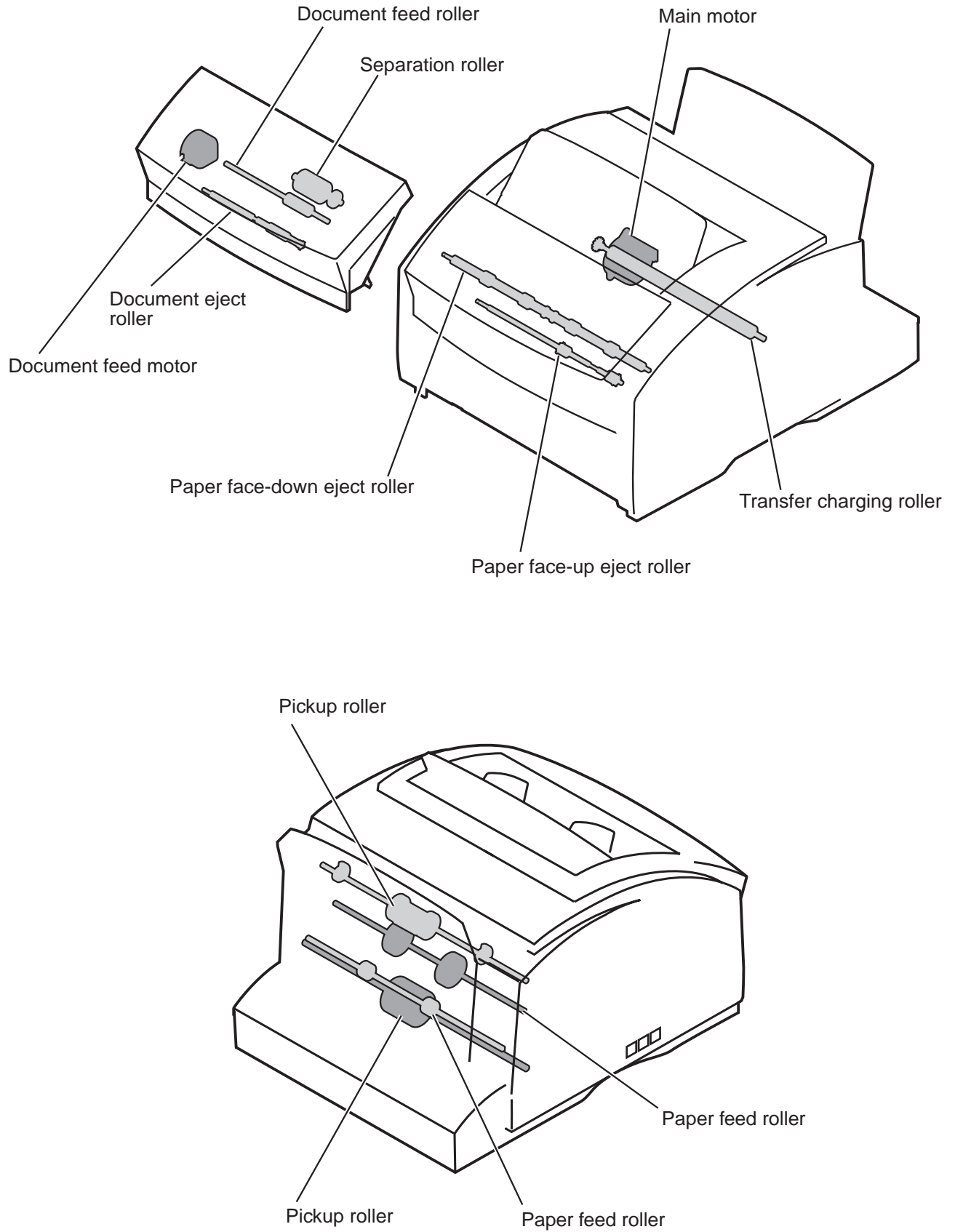
**Figure 1-10 Personnel Hazards (2)**

**1-19**

### 5.1.1 Electrical shock

**Electrical shock hazard**
- To prevent electrical shock, be sure to disconnect the power cord and modular jack before disassembly.
- Remove grounding wrist straps before servicing this unit while the FAX's power is on. Otherwise, electrical shock may occur.

**Power supply unit**

When power is supplied to this unit, 230 VAC will be supplied to the primary side.

**Telephone line**

**NOTE**

If a telephone line is connected to this unit, 48 VDC will be supplied by this line. When a call signal is received, a voltage of 90 VAC Vrms will be supplied.

### 5.1.2 High-temperature parts

**High-temperature warning**

To prevent skin burns, disconnect the power cord and let this unit stand for at least 10 minutes to allow hot parts to cool.

**How to treat burns**

**NOTE**

Heat of about 122°F (50°C) or more causes burns. Also, the longer the contact, the more severe the burn.

When treating a burn, the first minute after receiving the burn is the most important. Cool the burn immediately with cold running water. In case of a serious burn, seek medical attention immediately.

**High-temperature parts**

The parts which get hot during operation are indicated. For the location of these parts, refer to the figures.

(Ambient temperature 95°F (35°C) continuous copy operation)

Document feed motor (approx. 168°F (76°C))
Main motor (approx. 145°F (63°C))
Fixing section frame surface (approx. 203°F (95°C))
Fixing ass'y and pressure roller (approx. 338°F (170°C))
Power supply unit (Max. ~ 187°F (86°C))
PCNT board assembly (Max. ~ 160°F (71°C))

### 5.1.3 Fire hazards

**Do not dispose in fire.**

Do not dispose of lithium batteries in fire. Doing so may rupture the battery and expose flammable materials.

Follow applicable local regulations when disposing of the SCNT board assembly's lithium battery.

**Fire hazard**

When using IPA or other solvents during servicing, heat or sparks from internal electronic circuits can ignite the solvent. Before using such solvents, be sure to turn off the power source and wait until the high-temperature parts cool. Use the solvent in a well-ventilated area.

### 5.1.4 Moving parts

**Moving parts**

To prevent mishaps due to moving or rotating parts during servicing, be sure to disconnect the power cord before disassembly.

### 5.1.5 LASER beams

This fax is a Class 1 Laser Product as defined in the EN60825 (IEC825) Radiation Safety of laser products, equipment classification, requirements and user's guide. This means that this product uses lasers that do not radiate dangerous laser beam and conforms to the regulations because the laser beam does not affect the user during operations.

**Warning**

If the LASER light gets in your eyes, it will damage the retina. Figure 1-11 is a LASER beam warning label which is placed on the LASER/scanner unit. Always remain within the contents of this manual when servicing, and do not carry out any other maintenance. Within the range of service work in this manual, you will not be exposed to dangerous LASER light.



**DANGER** - Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.
**CAUTION** - INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.
**ATTENTION** - RAYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE.
EXPOSITION DANGEREUSE AU FAISCEAU.
**VORSICHT** - UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFNET.
NICHT DEM STRAHL AUSSETZEN.
**ATTENZIONE** - RADIAZIONE LASER INVISIBLE IN CASO DI APERTURA.
EVITARE L'ESPOSIZIONE AL FASCIO.
**PRECAUCION** - RADIACION LASER INVISIBLE CUANDO SE ABRE.
EVITAR EXPONERSE AL RAYO.
**VARO!** - AAVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE
LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

**VARNING!** - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD.
BETRAKTA EJ STRÅLEN.
**ADVARSEL!** - USYNLIG LASER STRÅLING, NÅR DENNE ER ÅBEN.
UNDGÅ BESTRÅLING.
**ADVARSEL** - USYNLIG LASERSTRÅLING, NÅR DEKSEL ÅPNES.
UNNGÅ EKSPONERING FOR STRÅLEN.
**注 意** - このカバーの内部では不可視レーザー光が放射されています。
レーザー光にさらされないようにしてください。 **RS5-8169**

**Figure 1-11 LASER beam warning label**

**Disassembly Prohibited**

Never disassemble or alter the printer section LASER/scanner unit. There is no servicing that requires you to disassemble the LASER/scanner unit.

**Safety Mechanism**

There is a safety mechanism that electrically stops LASER emission and scanner mirror rotation when the front cover is opened and when the microswitch on the body frame has operated.

**NOTE**

Also there is a safety mechanism that mechanically closes the shutter in the LASER/scanner unit to cut off the laser path, when the front cover is opened.

### 5.2 General Cautions
#### 5.2.1 Unit cautions

# *Safety Instructions*

Read these safety instructions thoroughly before using your
FAX-L350, and keep them handy in case you need to refer to them later.

⚠ **Caution** | Except as speci cally described in this user's guide, do not attempt to service the FAX-L350 yourself. Never attempt to disassemble the unit: opening and removing its interior covers will expose you to dangerous voltages and other risks. For all service, contact your local authorized Canon dealer or the Canon help line.

❏ Always follow all warnings and instructions marked on the FAX-L350.

❏ Use the FAX-L350 only on a sturdy , stable, level surface. If the unit falls, it could be seriously damaged.

❏ Do not use the FAX-L350 near water. If you spill liquid on or into the unit, unplug it immediately and call your local authorized Canon dealer or the Canon help line.

❏ The back of the FAX-L350 includes slots and openings for ventilation. To keep the FAX-L350 from overheating (which can cause it to operate abnormally and create a  risk), take care not to block or cover these openings. Do not operate the unit on a bed, sofa, rug, or other similar soft surface, or near a radiator or other heat source. Do not place the FAX-L350 in a closet or cabinet or on shelves unless adequate ventilation is available. See "Choosing a Location for our FAX-L350" on page 1-25 for guidelines on how much space the unit needs for ventilation.

❏ Operate the FAX-L350 only from the type of power source indicated on the unit's label. If you are unsure of the type of power available from your wall outlets, contact your local power company.

❏ Make sure the total amperage used by all devices plugged into the wall outlet does not exceed the ampere rating of the outlet's circuit breaker.

❏ Do not allow anything to rest on the power cord or place the FAX-L350 where the cord will be walked on. Make sure the cord is not knotted or kinked.

**Figure 1-12 Unit Cautions (1)**

❑ Do not insert object of any kind into the slots or openings on the FAX-L350's cabinet, as they could touch dangerous voltage points or short out parts, and result in re or electric shock.

❑ Do not allow small objects (such as pins, paper clips, or staples) to fall into the FAX-L350. If something does fall into it, unplug the unit immediately and call your local authorized Canon dealer or the Canon help line.

❑ Do not plug the power cord into an uninterruptible power supply (UPS).

❑ Always unplug the FAX-L350 before moving or cleaning it.

❑ Whenever you unplug the FAX-L350, wait at least five seconds before you plug it back in.

❑ Keep the FAX-L350 away from direct sunlight, as this can damage it. If you have to place it near a window, install heavy curtains or blinds.

❑ Do not expose the FAX-L350 to extreme temperature fluctuations. Install the unit in a place with temperatures between 50° and 90.5°F (10° and 32.5°C).

❑ Always unplug the FAX-L350 during thunderstorms.

❑ Before you transport the FAX-L350, remove the toner cartridge.

❑ Always lift the FAX-L350 as shown below. Never lift it by its multi-purpose tray or other supports.
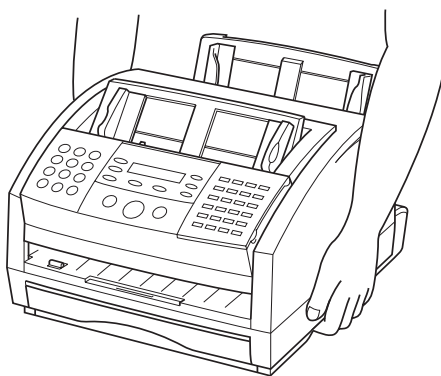


**Figure 1-13 Unit Cautions (2)**

**Caution**

Unplug the FAX-L350 and contact your local authorized Canon dealer or the Canon help line in any of these situations:

❏ If the power cord or plug is damaged or frayed.

❏ If liquid spills into the unit, or if it is otherwise exposed to rain or liquids.

❏ If you notice smoke or unusual noises or odour coming from it.

❏ If the FAX-L350 does not operate normally when you follow the operating instructions. Adjust only those controls that are covered by the operating instructions in this user's guide, or you can damage the unit and require extensive repair work.

❏ If the FAX-L350 is dropped or its cabinet damaged.

❏ If the FAX-L350 begins performing poorly.

❏ The optional handset emits low level electromagnetic waves. If you use a cardiac pacemaker and feel abnormalities, please move away from this product and consult your doctor.

**Figure 1-14 Unit Cautions (3)**

# Choosing a Location for our FAX-L350

Before unpacking your FAX-L350, follow these guidelines to choose an appropriate location for the unit.

**⚠ Caution**   Please eview the information provided in "Safety Instructions" on pages 1-22 to 1-24, to make sure you are installing your FAX-L350 for safe use.

❏ Put theFAX-L350 -in a cool, dry, clean, well ventilated place:

- Make sure the area is free from dust.

- Make sure the location is not affected by extreme temperature fluctuations, and remains between 50˚ and 90.5˚F (10˚ and 32.5˚C).

- Make sure the area's relative humidity is always between 20% and 80%.

❏ Keep the FAX-L350 away from direct sunlight.

❏ If possible, place the FAX-L350 near an existing telephone outlet, to allow for an easy connection of the telephone line to the unit.

❏ Place the FAX-L350 near an electrical wall outlet that povides 200 240 volt AC (50 60 Hz) power.

❏ Place the FAX-L350  near the PC you will be connecting it to. Make sure you can reach it easily, as you will be using the FAX-L350 as a printer, fax machine, copier, scanner, and telephone.

❏ Do not plug the FAX-L350 into the same circuit as an appliance such as an air conditioner, electric typewriter, television, or copier. Such devices generate electrical noise that can interfere with your unit's ability to send or receive faxes.

❏ Set the FAX-L350 on a at, stable, vibration-free surface that is strong enough to support its weight (about 28 lb/13 kg).

**Figure 1-15 Unit Cautions (4)**

## Connecting the Power Cord

**⚠ Caution**

Follow these guidelines when connecting your FAX-L350 to a power source:

❏ The FAX-L350 is intended for domestic use only and requires 200–240V AC. Do not use it outside the country where it was purchased.

❏ Use only the power cord that came with the unit. Using a longer cord or extension cord can cause the FAX-L350 to malfunction.

❏ Unplug the unit only by pulling on the plug itself. Never pull on the cord.

❏ Do not plug the FAX-L350 into an outlet shared with an appliance such as an air conditioner, computer, electric typewriter, or copier. These devices generate electrical noise, which can interfere with the operation of the FAX-L350.

❏ Make sure nothing is laying on the power cord, and that the cord cannot be walked on or tripped over.

❏ Do not overload the electrical outlet. Make sure the total amperage used by all the machines plugged into the outlet does not exceed the ampere rating of the outlet's circuit breaker.

❏ Do not plug the unit into an uninterruptible power supply (UPS).

**Figure 1-16 Unit Cautions (5)**

Connect the power cord as follows:

1.  Plug the supplied power cord into the power connector on the back of the FAX-L350.
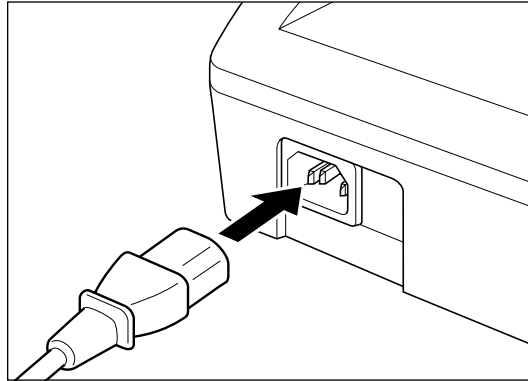


2.  Plug the other end of the power cord into the outlet.

**Note** The FAX-L350 has no power switch, so its power is on as long as it is plugged in. Once connected, though, the unit still needs to warm up before you can use it.

❏  While the FAX-L350 is warming up, the message PLEASE WAIT appears in the LCD display:

```
PLEASE WAIT
```

❏  When the date and receive mode appear, the FAX-L350 is in standby mode and ready for use:

```
31/12/1999 FRI 10:00
FaxOnly       STANDARD
```

**Note** If the toner cartridge has not been installed yet, the message CHECK COVER/CART alternates with the standby mode display:

```
CHECK COVER/CART
```

```
31/12/1999 FRI 10:00
FaxOnly       STANDARD
```

**Figure 1-17 Unit Cautions (6)**

# *Making Connections*

## *Connecting the FAX-L350 to Your PC*

Your FAX-L350 has an 8-bit, bi-directional parallel interface port that allows you to connect it to a PC. To do this, you need to purchase a Centronics-compatible parallel interface cable from your dealer.

**Note** | For best results, use a cable that is no longer than 6.6 feet (2 meters). Canon recommends that you use a cable that complies with IEEE 1284. Contact your local authorized Canon dealer if you need help in selecting a cable.

Connect the FAX-L350 to your computer as follows:

1. Make sure the computer is turned off and the FAX-L350 is unplugged.

2. Connect the parallel interface cable to your FAX-L350:

   a. Align the cable connector with the interface port so their shapes match.

   b. Gently press the cable connector into the port.

   c. Secure the cable connector by snapping both wire clips (on the sides of the port) into the cable connector, as shown below.
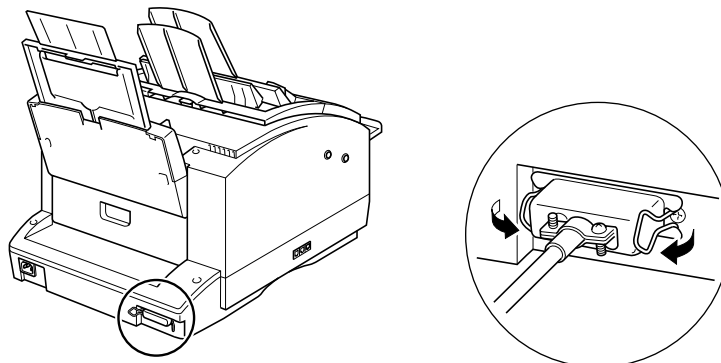
3. Connect the other end of the cable to the parallel interface port on your computer in the same manner.

**Figure 1-18 Unit Cautions (7)**

### 5.2.2 Toner cartridge cautions
**a) Handling the toner cartridge**

# *The Toner Cartridge*

## *Handling and Storing Cartridges*

❏ Do not expose the cartridge to direct sunlight or bright light for longer than ve minutes.

❏ Do not open the drum protective shutter on the cartridge. If the drum surface is exposed to light and damaged, print quality may deteriorate.

❏ Do not stand the cartridge on end, and do not turn it upside down. If toner becomes caked in the cartridge, it may prove impossible to free it even by shaking the cartridge.

❏ Keep the cartridge away from computer screens, disk drives, and oppy disks. The magnet inside the cartridge may harm these items.

❏ Never touch the drum protective shutter. When holding the cartridge avoid touching the drum protective shutter with your hands.

❏ Do not store the cartridge in direct sunlight.

❏ Avoid locations subject to high temperature, high humidity, or rapid changes in temperature. Store the cartridge between 32° and 95° F (0° and 35° C).

❏ Hold the cartridge as shown so that your hand is not touching the drum's protective shutter.

**Figure 1-19 Precautions for Handling Cartridge (1)**

**b) Usage period of toner cartridge**

The usage period for the toner cartridge is stamped on the label of its individual package.  This period lasts for 2.5 years from the date of manufacture.   Using a cartridge after this period may reduce print quality.

❏ Store the cartridge in its protective bag. Do not open the bag until you are ready to install the cartridge in the unit.

❏ Save the protective bag. You may need to repack and transport the cartridge at a later date.

❏ Do not store the cartridge in salty air or where there are corrosive gases such as from aerosol sprays.

❏ Do not remove the cartridge from the FAX-L350 unless necessary.

⚠ **Caution**

DO NOT PLACE THE CARTRIDGE IN FIRE. TONER POWDER IS FLAMMABLE.

**Figure 1-20 Precautions for Handling Cartridge (2)**

## 5.3 Servicing Cautions
### 5.3.1 Damage from static charge

This unit contains contact sensor and printed circuit boards equipped with ROM, RAM, custom chips, etc.
These electronic components are susceptible to damage caused by static charge.
When disassembling this unit, take care to prevent static charge.

**Static electricity**

Electrostatic discharge damages electronic components and alters their electrical characteristics. Even plastic tools and hands without grounding wrist straps will generate enough static electricity to damage electronic components.

The following equipment is needed to prevent electrostatic discharge damage:

• A earthed conductive mat
• Grounding wrist straps
• A cord with alligator clips to ground this unit's metal chassis

If you do not have any of the above on hand (during on-site servicing), follow the alternate measures below:

• Use a grounding bag to store and transport printed circuit boards and electronic devices.
• Avoid wearing silk or polyester clothing and leather-soled shoes.  Wear cotton clothing and rubber-soled shoes instead.
• Avoid servicing this unit in a carpeted room.
• Before servicing this unit, touch this unit's grounded terminals to discharge any static charge.
• Wear grounding wrist straps and ground this unit's metal chassis.
• Always handle the circuit boards and devices along their edges.  Do not touch the components and terminals with your fingers.

**Electric shock when carrying out work with the fax turned on**

When you must service the fax with the power cord plugged in, you must not ground your body with grounding wrist straps. This is to prevent electricity passing to your body and causing electric shock.

### 5.3.2 Scanner section
#### a) Contact sensor

• Handle contact sensors with care to prevent scratching or smudging of the scanning surface.  Scratches or smudges can cause vertical stripes, etc., to appear on the scanned image.

#### b) ADF rollers

• Be careful not to scratch the ADF rollers.  If the rollers are scratched, paper jams may result.

#### c) Lubrication points

• Document feed roller.

### 5.3.3 Printer section

#### a) Transfer charging roller

If skin, oil or, the like, gets on the sponge of the transfer charging roller, the rear side of the recording paper can be soiled, and blank patches can occur in printing.

During disassembly, hold the transfer charging roller by the shaft and gears at both ends.
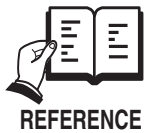
**Cleaning method**

If a printing defects occur, clean the transfer charging roller, as explained in *Chapter 3: Maintenance & Service.*

**REFERENCE**

#### b) Fixing ass'y

If you get skin, oil, or the like, on the internal fixing film or pressure roller surface, the front or rear of the recording paper may be soiled, and fixing defects, and jams can occur.

During disassembly, hold the fixing ass'y by the plastic sections. Hold the pressure roller by the shaft, at both ends of the rollers.
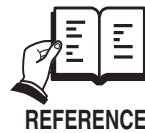
**Cleaning method**

If the fixing film or pressure roller is soiled, clean the transfer charging roller, as explained in *Chapter 3: Maintenance & Service.*

**REFERENCE**

#### c) Lubrication points

Do not touch the greased parts of the outer periphery of the gear shaft and the gear teeth at the left side of the main frame. If you do, the grease (applied for smooth operation of the printer mechanism) will come off.

Use only specified grease.

If you use other grease, the grease may oxidize, and weaken plastic parts.
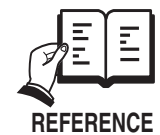
If you accidentally touch a greased part and grease comes off, reapply the grease, *see the PARTS CATALOG (supplied separately).*

**REFERENCE**

**d) LASER/Scanner unit**

The LASER/scanner unit cannot be adjusted in the field so do not attempt to disassemble it.

Never loosen or remove the screws on the LASER/scanner unit. Doing so might prevent satisfactory printing.

Screws
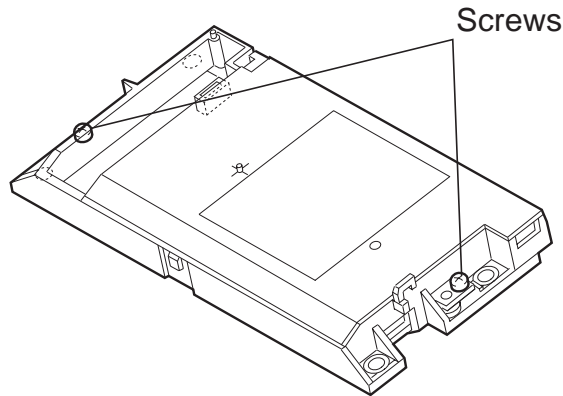
**Figure 1-21 Precaution for Handling LASER/scanner Unit**

## 5.3.4 Paper feed section

### a) Pick-up roller

If, skin, oil or, the like, gets on the pick-up roller surface, misfeeding, jam, or multi-feeding canoccur.

During disassembly, hold the pick-up roller by the plastic sections.

---
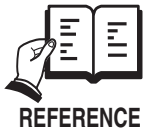
**Cleaning method**

If the printing defects occur, clean the pick-up roller, as explained in *Chapter 3: Maintenance & Service.*

**REFERENCE**

---

**1-33**

## 5.3.5 Paper load section

### b) Lifting arm position

If cassette is removed with the lifting arm raised to clear jam, the cassette cannot be inserted again. If the recording paper cassette is inserted forcibly, the arm may be damaged. To initialize the lifting arm position (move the arm down), turn the power off and on again or
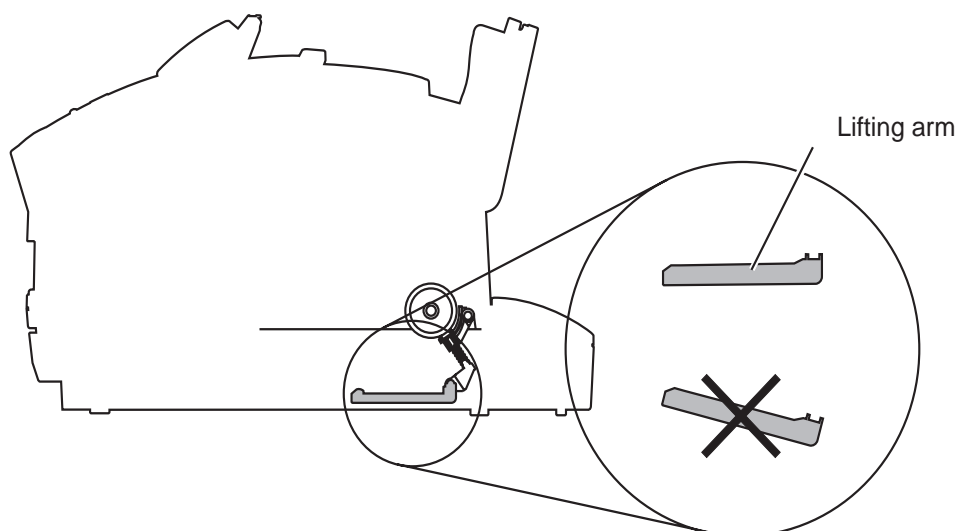


Lifting arm

**Figure 1-22 Lifting arm position**

## 5.3.6 Control boards

### a) SCNT board

• The SCNT board stores the user data, service data, and other data. Therefore, when replacing the SCNT board, print out the stored data and then enter this data into the new SCNT board.

> The SCNT board replacement precaution is described in *"5.4.3 SCNT board replacement precautions" on Page 1-39.*

**REFERENCE**

• The SCNT board's volume resistor VR1 has been factory-adjusted. Service personnel are not to alter its setting.

### b) Power supply unit

• Current fuses FU101 on the power supply unit are directly attached. If these fuses must be replaced, we recommend replacing them together with the power supply unit.
• The power supply unit's adjustable volume VR201, VR202 has been factory-adjusted. Service personnel are not to alter its setting.

> Do not plug the unit into an uninterruptible power supply (UPS).
> Doing so may result in damage to the fixing ass'y.

### 5.3.7 Replacing ROM

Observe the following precautions when replacing the ROM on the SCNT board, for example, when replacing a defective ROM.

#### a) Preparation

Print out all battery backed up data.

Reception image data in image memory is erased appox. one hour after power is turned off.

#### b) Replacement

(1) Make sure that the power cord is disconnected.

(2) Put on the grounding wrist straps to counter electrostatic discharge.

(3) Open the operation cover, remove the 1 screw on the inner cover, and remove the ROM cover referring to the *"Parts catalog"* *(supplied separately)*.

(4) Remove the ROM mounted on the SCNT board using the ROM extractor etc.

(5) Insert the new ROM, making sure that the notches on the ROM package and IC socket are aligned.

#### c) After replacement

(1) When a defective ROM is being replaced with a new ROM, turn the power on after mounting on the SCNT board. This completes replacement.

(2) When the ROM is replaced for upgrading the software and upgrading involves changing software switch settings such as service data, you must perform the following operation.

• Perform All Clear operation. After you perform All clear operation, register the backed up data referring the list you printed out earlier.

## 5.4 Data-related precautions

The memory IC on the circuit board stores the user's registration data and values for various counters, etc., required for servicing.  Although this data is normally retained in memory, it can be deleted by mistake.  When handling this data during servicing, note the following precautions.

System controller (IC10)
(With built-in SRAM)

Lithium battery

DRAM (IC9)

Rechargeable battery
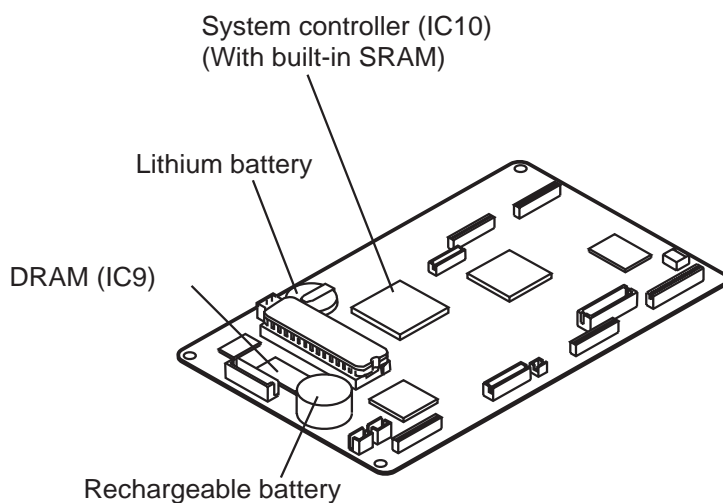
**Figure 1-23 Backed up Devices**

## 5.4.1 Data in the image storage memory (DRAM)

DRAM stores image data which was read other than by a direct transmission.  It also acts as a buffer memory to store the image data received.  Transmitted and reception image data stored in the DRAM, on the SCNT board, are backed up for approx. one hour by electric double layer capacitor.

---
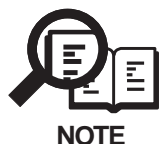
**NOTE**

**Reception image data**

When image data are set to be printed, they will be stored in the DRAM as memory reception images, and **"RECEIVED IN MEMORY"** will be displayed.  If printing is disabled due to a fault in the printing section, transfer the stored reception image data to another fax machine.

---

**Reception image data transfer**

When reception images cannot be output due to printer failure, etc., the image data can be transferred to another fax machine by using the reception image data transfer function.

**NOTE**

*Memory Reference*

```
MEMORY REFERENCE
  1. DOC. MEMORY LIST
```

*Select 3. RESEND DOCUMENT*

```
MEMORY REFERENCE
  3. RESEND DOCUMENT
```

*Set button*

*Select transaction number*

```
TEL=
```

( Numeric button )  *Input dial number*

*Set button*
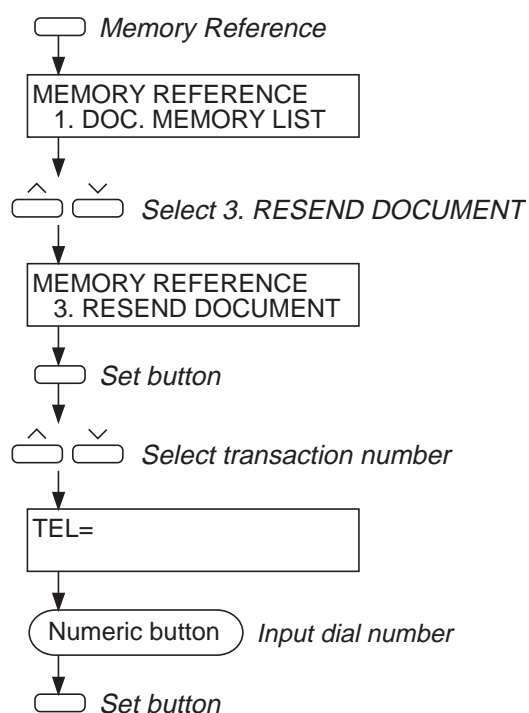
**Figure 1-24 Reception Image Data Transfer**

### 5.4.2 Data in the control processing memory (SRAM)

SRAM is backed up by a lithium battery. It can retain the stored data for 5 years after the power is turned off. SRAM stores the following data: All the data the user entered with the user data setting, the activity reports and other report-generating data, the redial data containing the redial destinations set with the Redial button, the servicing data set by repair personnel with the service soft switch. SRAM stores almost all of the data which can be entered or set.

These stored data can be checked with various reports.

**NOTE**

**Jumper plug precautions**

The control/image processing memory is backed up by shorting the jumper pin (JP1) on the SCNT board with the jumper plug. If the jumper plug is removed and the power is turned off, the data in SRAM will be lost.

Before removing the jumper plug, be sure to print out the data stored in the SRAM.

**Lithium battery life**

The lithium battery can last for over 5 years after the power is turned off.

When the power is on, the lithium battery's power is untapped. Therefore, the actual battery life can be much longer.

When the lithium battery becomes exhausted, **"DATA ERROR"** will be displayed after the power is turned off or on. When this happens, replace the lithium battery. Since the data in SRAM will be lost when the battery is replaced, it cannot be printed out.

After the lithium battery is replaced and the power is turned on, **"DATA ERROR"** will be displayed. Press the *Set* button to discard the contents in SRAM and initialize it to the factory defaults.

### 5.4.3 SCNT board replacement precautions

Before replacing the SCNT board, print out all of the stored data.

The list which output the data that must be entered into the new SCNT board is listed below.

**User list**

One-touch speed dialing list
Coded speed dialing list
Group dialing list
User data list
Activity report

**Service list**

System data list
System dump list
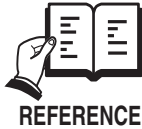
To printout these list, *see Chapter 3: 7. SERVICE REPORT on Page 3-65.*

**REFERENCE**

The service part SCNT board uses a jumper pin to close the lithium battery's circuit. To prevent battery depletion during shipping, only one prong of the jumper pin is covered with a jumper plug.

When replacing the SCNT board, re-attach the jumper plug so that it covers both prongs of the jumper pin and closes the circuit; the lithium battery can then be used for SRAM back-up.

If this procedure is omitted, there will be no battery back-up for the SRAM data.

After the new SCNT board is installed and the power is turned on, **"DATA ERROR"** will be displayed.  Press the *Set* button to discard the SRAM's irregular contents and initialize it to the factory defaults.

Then refer to the list that was printed out beforehand and enter the various data.

### 5.4.4 Data initialization through service operation

All the data can be initialized with the service data #8 clear operation.

**REFERENCE**
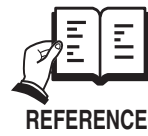
For details on the initialization procedure and the data that is erased, *see Chapter 3: 5.2 Service Data Settings on Page 3-28.*

**NOTE**

**"All clear" when nothing works.**

On a rare occasion, the display may go blank and all the buttons may stop working.  Severe electrical noise and static can cause problems as well.  In such a case, use the **"All clear"** feature.

After installing the unit for the first time and connecting the power cord, execute **"All clear"**.

Also, after an **"All clear"**, we recommend that you set the country type to suit the communication standard used in your country.  Below is the procedure for performing All clear and type setting operation.

**ALL CLEAR**

```
┌──────────────┐   ┌───┐   ┌──────────────────┐   ┌──────┐   ┌────┐
│ Data         │───│ # │───│ Display #8 CLEAR by│───│ Set  │───│ ∧  │─┐
│ Registration │   │   │   │ pressing ∧ or ∨ button│  │      │   │    │ │
└──────────────┘   └───┘   └──────────────────┘   └──────┘   └────┘ │
                                                                     │
  ┌──────────────┐   ┌──────┐   ┌─────────────┐                      │
──│ #8 CLEAR     │───│ Set  │───│   Standby   │                      │
  │ ALL          │   │      │   │             │                      │
  └──────────────┘   └──────┘   └─────────────┘
```

**TYPE SETTING**

```
┌──────────────┐   ┌───┐   ┌──────────────────┐   ┌──────┐   ┌────┐
│ Data         │───│ # │───│ Display #5 TYPE by │───│ Set  │───│ ∧  │─┐
│ Registration │   │   │   │ pressing ∧ or ∨ button│  │      │   │    │ │
└──────────────┘   └───┘   └──────────────────┘   └──────┘   └────┘ │
                                                                     │
  ┌──────────────────┐   ┌──────┐   ┌──────┐   ┌─────────────┐       │
──│ Select the country│───│ Set  │───│ Stop │───│   Standby   │       │
  │ by ∧ or ∨ button  │   │      │   │      │   │             │       │
  └──────────────────┘   └──────┘   └──────┘   └─────────────┘
```
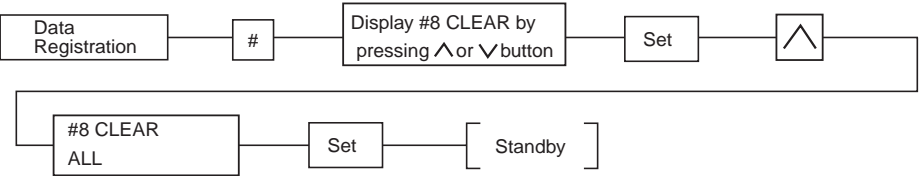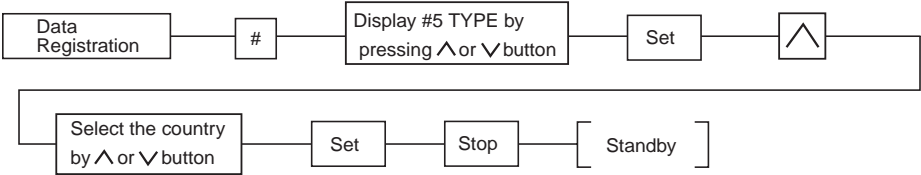
**Figure 1-25 All Clear and Type Setting**

## 5.5 Protective Mechanism

### 5.5.1 Data battery backup function

If there is a power outage or if the power is turned off, the data stored in the control memory is retained since the lithium battery function as a data battery backup.

**REFERENCE**

For details on the backed up data, *see Chapter 1: 5.4 Data-related precautions  on Page 1-36.*

### 5.5.2 Overcurrent protection

This machine is provided with an overcurrent with built-in fuse, to prevent abnormal rises in temperature if an overcurrent flows to the motors and power supply due to driver IC trouble, software lockup and short circuit.

| Protected Parts | Safety Measures |
|---|---|
| Document feed motor | IC protector (FU501) on SCNT board |
| Main motor | IC protector (FU501) on SCNT board |
| Power supply unit | Glass-tube current fuse (FU101:250V, 3.15A) |
| | overcurrent protection circuit |
| | thermistor (TH101) |
| Fixing ass'y | Thermal fuse, thermistor |

### 5.5.3 Lightning protection

The fax unit's electrical components are protected from abnormal voltage caused by lightning.

| Protected Component | Safety Device |
|---|---|
| NCU board ass'y | Arrester (AR1, AR2) located at the primary side of the NCU board discharge a voltage of more than 500VDC via the power cord. |
| Power supply unit | Varistor (VZ101, VZ102*) and arrester (AR101)* located at the primary side of the power supply unit discharge a voltage of more than * For VZ102 and AR101, only the AE version exits. |

**NOTE**

**When protection is not possible**

The NCU board sometimes may not be protected even by the protection circuits if lightning strikes the telephone line.

### 5.5.4 Power leakage protection

The AC line, telephone line, and metal parts of the fax unit are completely insulated.  The fax unit has a grounded power cord to prevent electrical shock.  If power leakage does occur, use the fax unit only with a grounded electrical outlet supplying the proper voltage.

# 6. QUALIFICATION REQUIRED FOR INSTALLATION WORK

The qualifications for installation must satisfy local laws and regulations.

# Chapter 2

# Technical Reference

# 1. DRIVE/ELECTRICAL SYSTEM LAYOUT

This machine is divided into three mechanisms: scanner section, paper supply section and printer section.

In the scanner section, the document feed motor drives the document feed rollers and separation rollers to feed the document from the document feed tray to the document eject slot at the front of the machine. The document is scanned by the contact sensor located along the document feed path.

In the paper supply section, the main motor in the printer section is used to drive the paper pickup roller, which separates one sheet at a time from multiple sheets set in the cassette at the bottom of the machine or set on the recording paper rest at the rear of the machine, and feeds the recording paper to the printer section.

In the printer section, the main motor drives the gears and rollers to print the image scanned from the document onto the recording paper fed from the papers supply section, which is then ejected. The user can choose to eject the printed paper either face up or face down.
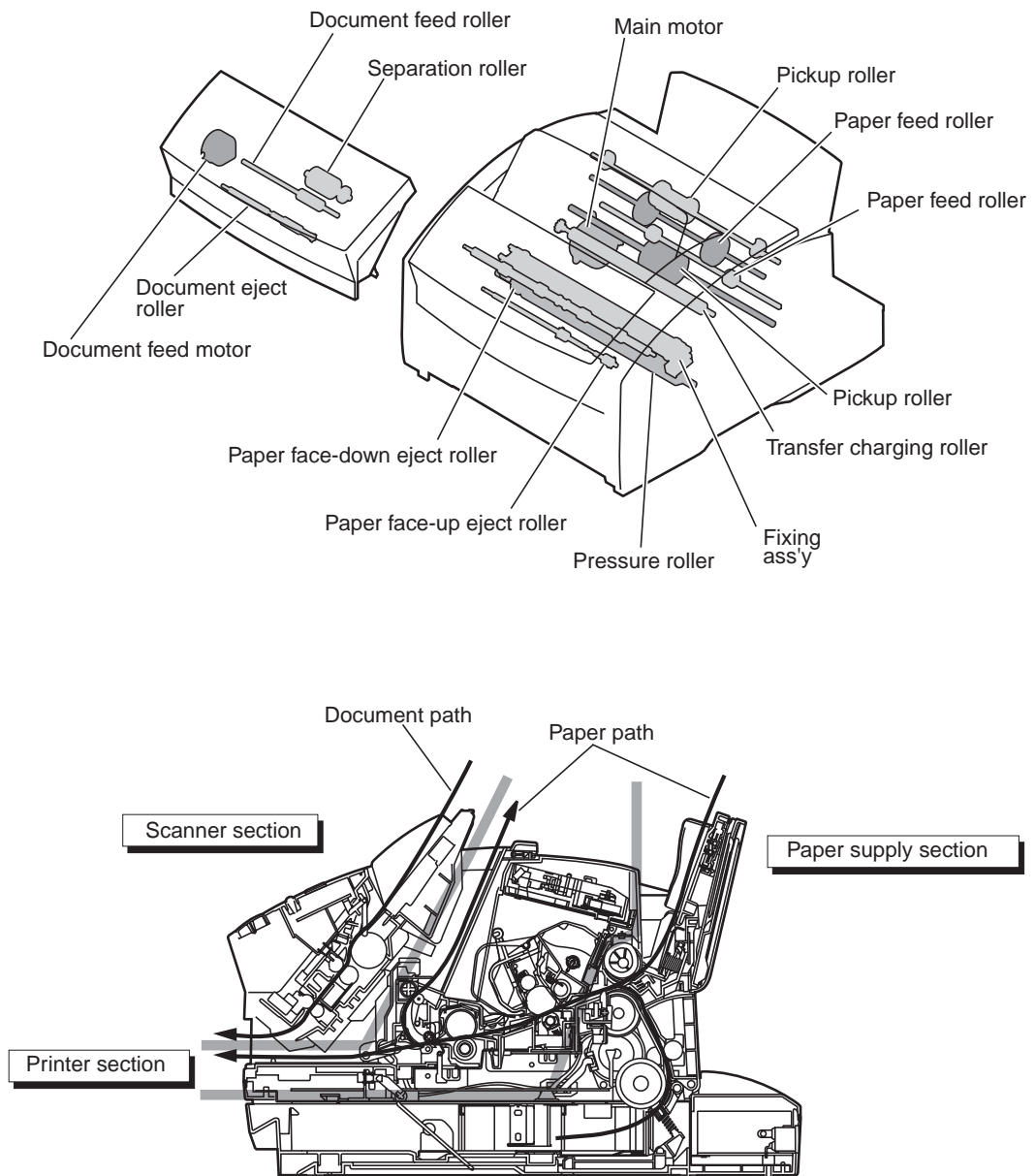


**Figure 2-1 Drive System Layout**

The following eight printed circuit boards are located in this machine:
• SCNT board that controls the entire system
• NCU board that interfaces with the telephone line
• MODULAR board that connects the telephone line and the NCU board
• PCNT board that generates high voltage for the printer
• OPCNT board that controls the operation panel's buttons and LCD.
• A power supply unit is also located in this machine.
• MCNT board that controls the main motor.
• INTERFACE board that interfaces with the PC.
The nine sensors shown below detect the status of the machine.
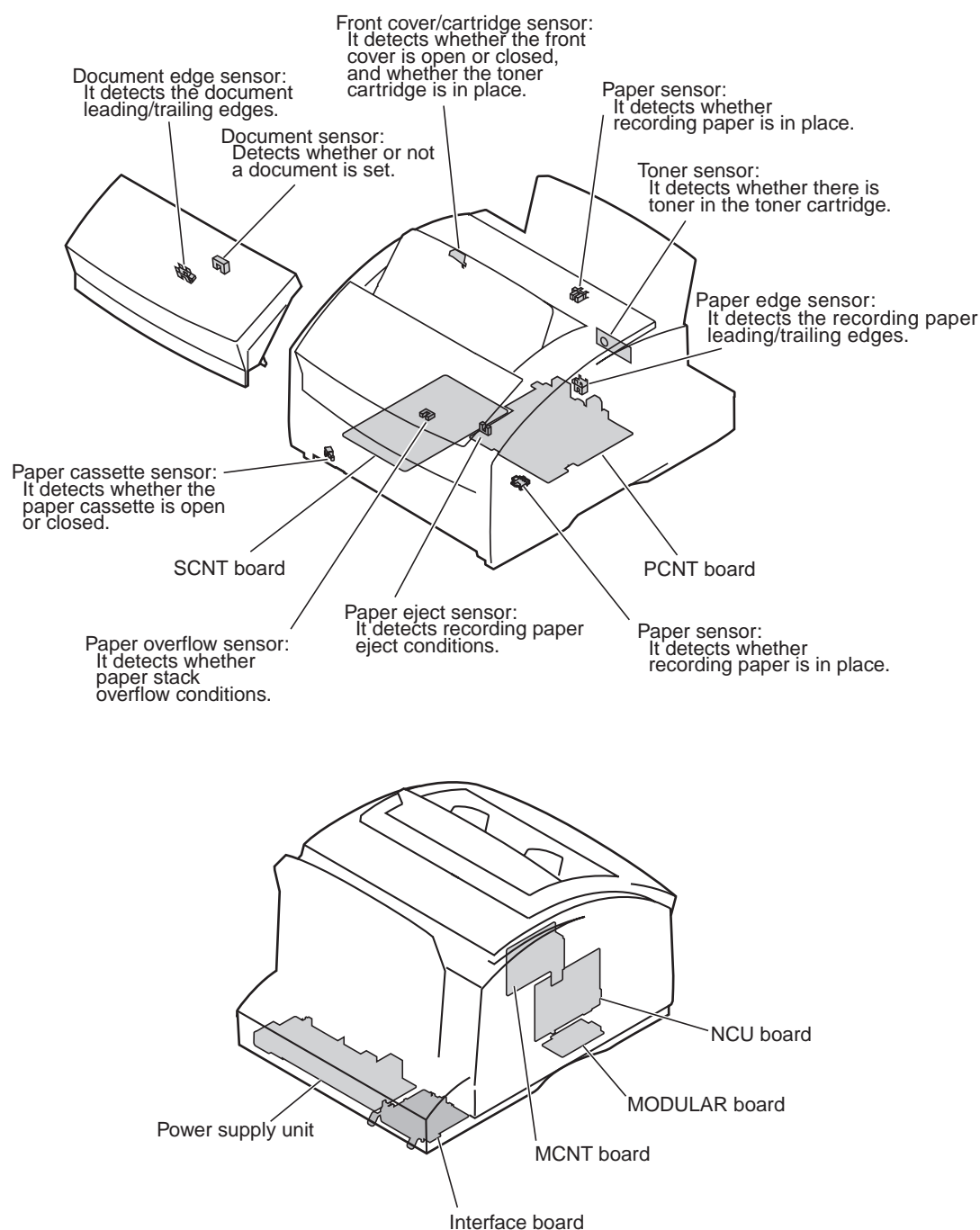
**Figure 2-2 Electrical System Layout**

2-3

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# 2. SCANNER MECHANISM

The scanner section scans documents that are to be sent or copied.
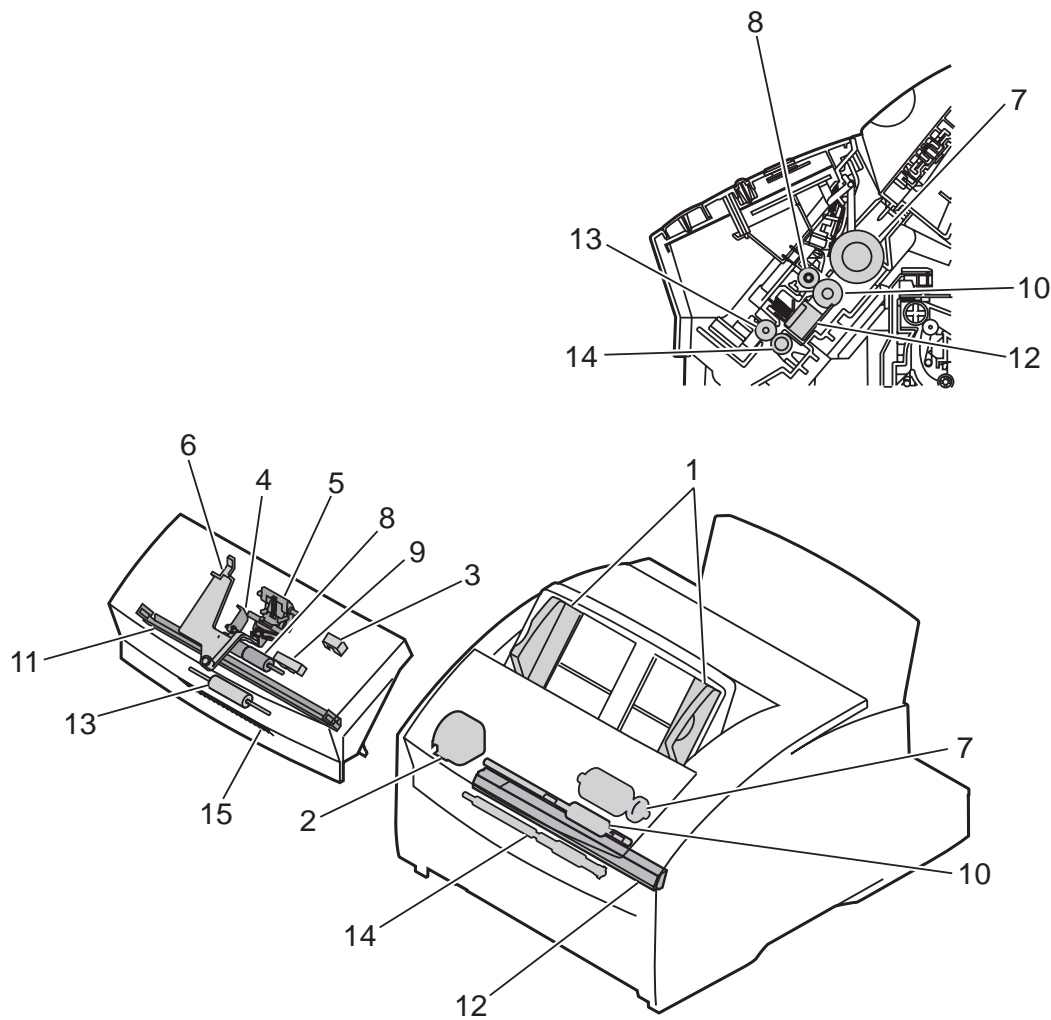


**Figure 2-3 Scanner Section**

**Names and functions of parts:**

**1. Paper Guide**

When properly adjusted to the width of the documents, the guide will hold the documents in the horizontal direction to prevent them from skewing when fed.

**2. Document Feed Motor**

This motor drives all the rollers in the scanner section.

**3. Document Sensor (DS)**

This sensor uses an actuator to detect the presence of documents to be scanned, and sends that information to the SCNT board by way of the gate array in the operation panel unit.

**4. Document Stopper**

This stopper is located to the side of the separation rollers, and prevents documents from entering too far inside the scanning section. This stopper is located here to improve document loading and prevent double feeding or non-feeding due to defective loading of documents.

**5. Separation Guide**

Separates the documents to prevent double-feeding.

**6. Document Feed Lever**

This lever switches between automatic document feed and manual document feed. Damage to the document caused by the separation roller can be minimized by switching to the manual document feed position when sending single sheets such as thick-stock paper or photographs.

**7. Separation Roller**

This roller uses differences in the coefficients of friction of the separation guide, document and separation roller to separate each of the sheets in a multiple-page document.

**8. Upper Document Feed Roller**

When the separation roller starts to rotate, the upper document feed roller raises the document stopper so that documents can be fed.

**9. Document Edge Sensor (DES)**

Using an actuator, the DES detects the edge of a document just before it reaches the contact sensor, and sends this information to the SCNT board.

**10. Document Feed Roller**

This roller feeds documents to the contact sensor after they are separated by the separation roller.

**11. White Sheet**

This white sheet is used as a whiteness reference when pre-scanning documents.

**12. Contact Sensor**

Scans the image information from the document, converts it to serial data, and transmits it to the SCNT board as an electrical signal. The contact sensor has a scanning resolution of 300 dpi.

**13. Upper Document Eject Roller**

Holds the document between the document eject rollers, and then ejects it.

**14. Document Eject Roller**

This roller ejects documents fed from the document feed roller.

**15. Static Eliminator Brush**

Removes static electricity which may have built up on the document in the scanning process, and guards against roller jams.

**NOTE**

---

**Initializing the upper document feed roller**

When the separation roller starts to rotate, the position of the upper document feed roller is simultaneously initialized to raise the document stopper. Initialization is carried out when the power is turned ON, when documents are inserted and when documents are ejected.

**Document feed lever**

Switching between automatic document feed and manual document feed is carried out by the document feed lever above the left side of the LCD. During automatic document feed, documents are gripped between the separation guide and the separation roller. Switching the lever to manual document feed raises the separation guide and frees it from the document. Manual document feed can therefore minimize the possibility of damage caused by pinching between the separation guide and separation roller when feeding documents such as thick-stock paper or photographs. However, because document separation does not occur in manual document feed mode, only one sheet at a time may be loaded. Loading multiple sheets will result in double feed.

**Document Jam Detection**

There are two types of document jams which may occur:

**a) Feed jam**

Occurs when the document edge sensor cannot detect the document's leading edge within 15 seconds after the start of document separation.

**b) Eject jam/document too long**

Occurs when the document edge sensor cannot detect the document's trailing edge within one meter of feeding after the document's leading edge is detected.

When one of these types of jams occurs, all data which have been read and stored in memory (except pages that have already been completely transmitted or copied) are erased.

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2-7

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# 3. PAPER SUPPLY SECTION

The paper supply section separates the sheets of recording paper loaded in the sheet feeder and feeds them to the printer section one sheet at a time.
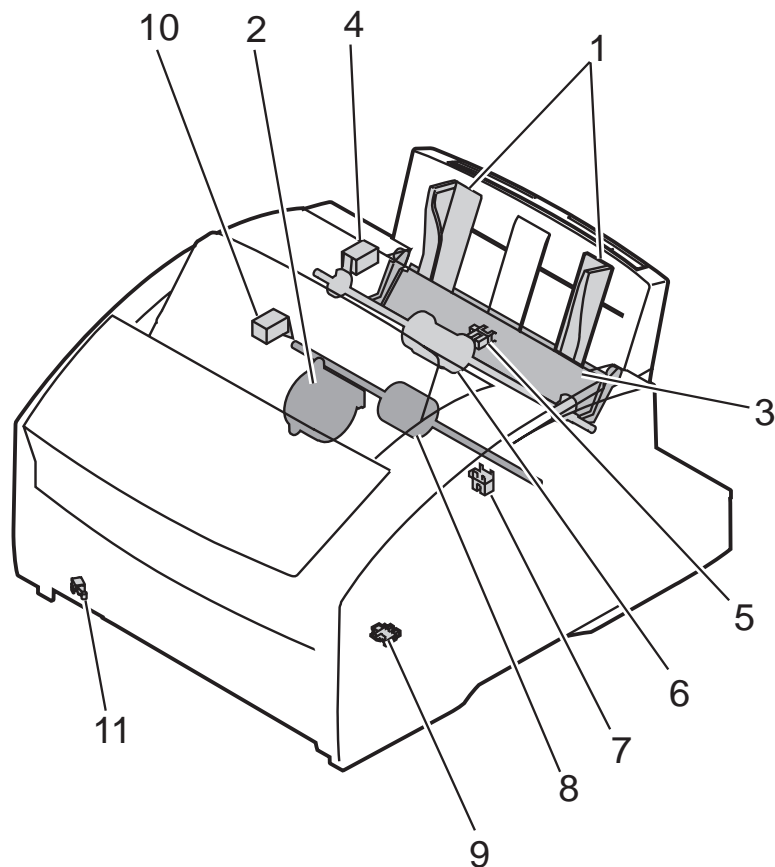


**Figure 2-4 Paper Supply Section**

**Names and functions of parts:**

**1. Paper Guide (MULTI-PURPOSE TRAY)**

This guide can be adjusted to the width of the loadable recording paper sizes. It prevents the recording paper from skewing during recording by accurately aligning the paper width.

**2. Main Motor**

This motor drives all the rollers in the paper supply section.

**3. Lifting Plate**

The lifting plate that was held down by the pickup roller is lifted up during paper feeding, and the recording paper loaded on the lifting plate contacts the pickup roller to be separated.

**4. Pickup Solenoid**

This solenoid controls rotation of the pickup roller. When the main motor is activated to begin paper feeding, the pickup solenoid releases the pickup roller. When the pickup roller picks up a sheet of recording paper and rotates one full turn, the solenoid locks the pickup roller again.

**5. Paper Sensor (PS)**

This sensor uses an actuator to detect the presence of recording paper in the sheet feeder.

**6. Pickup Roller**

The pickup roller is rotated once, and operating together with the lifting plate, feeds the paper one sheet at a time.

**7. Paper Edge Sensor (PES)**

This sensor uses an actuator to detect the leading edge of recording paper and sends detection information to the SCNT board. It is located under the pickup roller.

**8. Pickup Roller**

The pickup roller is rotated once, and operating together with the lifting plate, feeds the paper one sheet at a time.

**9. Paper Sensor**

The sensor detects the presence/absence of recording paper inside the cassette.

**10. Pickup solenoid**

This solenoid controls rotation of the pickup roller. When the main motor is activated to begin paper feeding, the pickup solenoid releases the pickup roller. When the pickup roller picks up a sheet of recording paper and rotates one full turn, the solenoid locks the pickup roller again.

**11. Paper cassette sensor**

The sensor detects the presence/absence of the paper cassette.

**NOTE**

**Paper Feed Jam Detection Retry Function**

Because the recording paper on this machine is loaded upright, the paper is sometimes difficult to feed when there is little recording paper left or the recording paper curls. For this reason even if the paper edge sensor does not detect the leading edge of the recording paper within a specific time* after the pickup solenoid releases the pickup roller the machine tries to repeat the same operation before judging that a jam has occurred. If the paper edge sensor still cannot detect the leading edge of the recording paper, a paper feed delay jam is detected.

* Within 3.5 sec. in the case of the Multi-purpose tray.

  Within 8 sec. in the case of the cassette.

**Initializing the lifting arm**

If the cassette is removed to clear jams with the fixing arm raised, the cassette cannot be inserted again. If the cassette is inserted forcibly, the arm may be damaged. To initialize the lifting arm position (move the arm down), with the toner cartridge installed turn the power off and on again or open and close the printer door or front cover, then, insert the cassette.

**NOTE**

**Paper feed jam detection**

There are two types of paper jam which may occur:

**a) Paper feed delay jam**

The paper feed delay jam occurs if the paper edge sensor does not detect the leading edge of the recording paper within a specific time* (including paper feed jam detection retry time) after the pickup solenoid releases the pickup roller.

* Within 3.5 sec. in the case of the Multi-purpose tray.

Within 8 sec. in the case of the Cassette.

**b) Paper feed stationary jam**

The paper feed stationary jam occurs if the trailing edge of the recording  paper  is  not detected within 11.7 seconds after the paper edge sensor detects the leading edge of the recording paper.

When either of these jams is detected, the message **"CLEAR PAPER JAM"** is displayed. If this machine is receiving, the data is received via memory reception. If the machine is copying from memory, the image data in memory will be cleared.

To clear a paper feed jam, open the front cover and remove the jammed recording paper from inside. When the front cover is closed, the recording paper is automatically output. When jammed recording paper is removed from inside without opening the front cover, open and close the front cover once to reset the printer.

**Paper size error**

The machine does not have a paper size sensor. It recognizes the paper sizes (Letter, A4, and Legal) according to the User setting.

A paper size error occurs if the specified paper size is different from the size of the paper placed in the sheet feeder when one page is actually printed. In this case, a message **"CHECK PAPER SIZE"** appears on the display, the ALARM lamp blinks, and the following operation is carried out.

**If the specified paper length is greater than the actual paper length:**

When the received document comprises one page, one sheet is printed and operation ends. The error message remains displayed, so clear the error message. When the received document comprises two or more pages, it is received in memory from the second sheet onward. Printing automatically starts from the 2nd sheet onwards after the error is corrected.

**If the specified paper length is less than the actual paper length:**

Regardless of whether the document consists of only one sheet or two or more sheets, it will be received in memory.

The document is automatically output after the error is corrected.

To correct the error, match actual recording paper with the User setting.

In this case of direct copying, a **"check paper size"** will not occur even if the size is different from that of the recording paper as long as the pickup is from the multi-purpose tray; if the pickup is from the cassette, however, a **"check paper size"** will occur.

In the case of memory copying, on the other hand, a **"check paper size"** will occur if the size is different from that of the recording paper when pickup is from either the cassette or the multi-purpose tray.

2-11

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# 4. PRINTER SECTION

The LASER beam printer engine comprises the following sections.
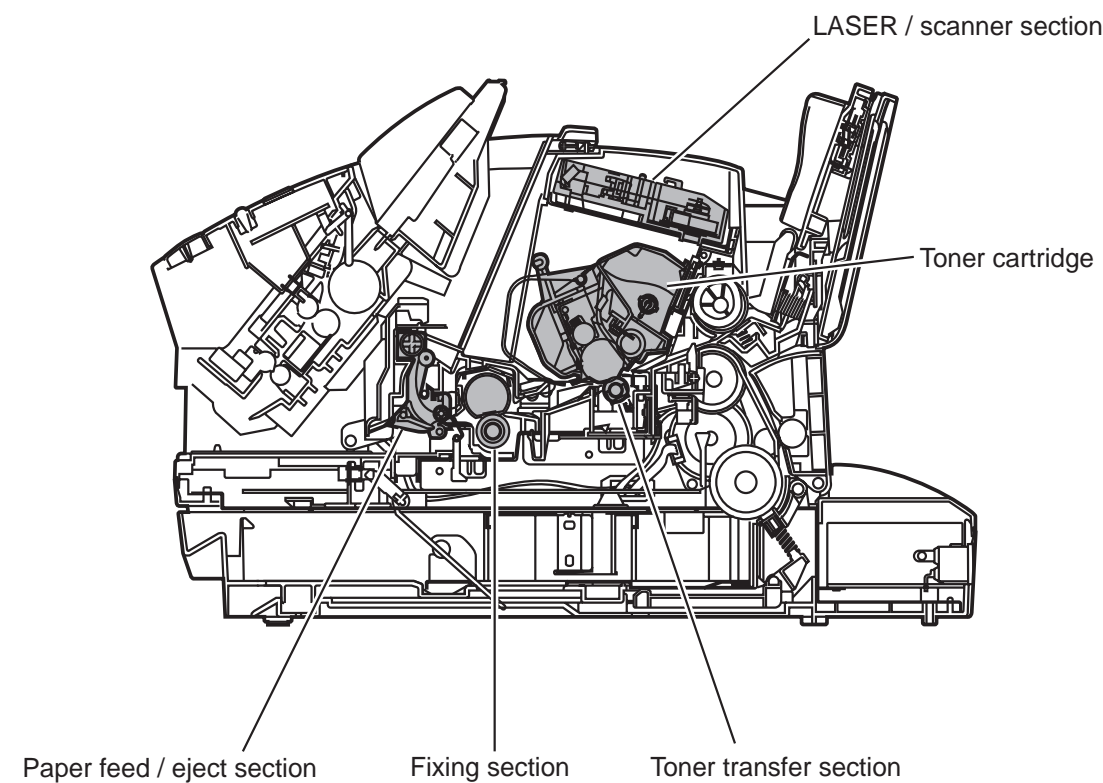


**Figure 2-5 Printer Section**

## 4.1 LASER/Scanner Section

This section comprises a LASER unit, cylindrical lens, 4-faced polygon mirror, scanner motor, imaging lens, reflection mirror and BD unit. The LASER is driven in accordance with the LASER drive signals that are sent from the PCNT board. This LASER light passes through the cylindrical lens to fall on the 4-faced polygon mirror that is rotating at a fixed speed. The LASER light is reflected from the 4-faced polygon mirror and passes through the imaging lens, and reflects from the reflection mirror to scan the photosensitive drum in the toner cartridge.

## 4.2 Toner Cartridge

This cartridge comprises the primary charging roller, developing cylinder, photosensitive drum, cleaner blade, and toner.

The LASER beam from the LASER/scanner section forms a latent static image on the photosensitive drum that is charged by the primary charging roller. The photosensitive drum rotates inside the toner cartridge, and rotation of the developing cylinder causes toner to adhere to the photosensitive drum to form a visible image which is then transferred to the recording paper at the toner transfer section. Residual toner is then removed from the surface of the photosensitive drum by the cleaning blade.

## 4.3 Toner Transfer Section

This section comprises the transfer charging roller and the static eliminator. The recording paper passes between the photosensitive drum and the transfer charging roller, and the transfer charging roller is charged with a charge opposite to that of the toner to transfer the toner on the photosensitive drum to the recording paper. The charge on the rear side of the recording paper is then removed by the static eliminator.

## 4.4 Fixing Section

This section comprises the fixing ass'y and pressure roller. The fixing section on this machine is an on-demand system that uses fixing film with low thermal capacity.

The toner that was transferred to the recording paper at the toner transfer section is fused to the paper and fixed as a permanent image.

The fixing ass'y has a built-in fixing heater and thermistor. The fixing temperature is controlled by the printer controller on the SCNT board.

## 4.5 Paper Feed/Eject Section

After toner is fixed in the fixing section, the recording paper is fed to either the face-up delivery slot or the face-down delivery slot that is switched by the flapper. The user selects the setting of the flapper by the paper delivery selector at the bottom left of the front panel.

All rollers from paper feed through paper ejection are driven by the main motor.

### 1. Paper eject sensor

An actuator is used to detect the leading edge of the recording paper that is fed towards the ejected paper. The detection information is sent to the SCNT board.

### 2. Flapper

This flapper switches the direction in which the recording paper is ejected after toner is fixed.

### 3. Paper overflow detection

The paper overflow sensor on the face-down paper eject cover detects paper stack overflow in the face-down delivery slot duling face-down output.
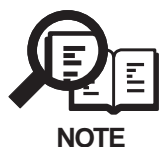
**NOTE**

**BD Malfunction**

If the total number of sheets printed after turning the power ON is four or more, and BD is out of the BD cycle for 2.0 seconds or more during laser drive while the scanner motor is rotating at fixed speed, the printer controller judges this to be a BD malfunction.

**Scanner Motor Malfunction**

If the predetermined speed of rotation is not reached within 3.0 seconds of start of scanner motor rotation, the printer controller detects a scanner motor malfunction and stops the scanner motor.

The LASER/scanner unit contains parts that require adjustment that must be adjusted.

Never disassemble the LASER/scanner.

**NOTE**

**No-toner detection**

The no-toner state is detected by the toner sensor (magnetic sensor) located on the pickup roller shaft. If a toner cartridge is installed, the toner sensor touches the side of the cartridge. The part of the cartridge which the toner sensor touches is made thinner to increase the sensor output. When the toner sensor detects no toner, the sensor output goes low.

**Cartridge detection**

A microswitch detects cartridge presence and front cover open/closed. The microswitch is structured so that it is shorted only when the cartridge is loaded and the front cover is closed.

### Drum cover shutter

If the photosensitive drum is subjected to strong light, optical memory can cause dropout areas or black bands to occur. To prevent the photosensitive drum from strong light, a drum cover shutter is attached. Do not open this cover unless absolutely necessary.

**NOTE**

### Fixing Heater Malfunction

The printer controller on the SCNT board detects a fixing heater malfunction in the following instances.

a)  When a temperature of 100°C or more is not detected within 15 seconds after the fixing heater begins heating toward the normal preset target temperature.

b)  When a fixing unit temperature of 195°C or more continues for 150m seconds.

c)  When a temperature of 20°C or more is not detected even though the power is supplied for 0.5 seconds during printing or warming up.

d)  When a temperature of less than 0°C is detected for 150m seconds during fixing heater control.

e)  When the fixing heater temperature falls to 90°C or lower for 3 seconds during printing.

When a fixing heater malfunction is detected, this machine shuts off the power supply to the fixing heater, stops the main motor, scanner motor and high-voltage systems, and generates a printer error.

### Paper eject jam detection

There are two types of paper eject jam which may occur.

**a) Paper eject stationary jam**

A paper eject stationary jam occurs when the paper eject sensor detects the paper between 3.3 and 4.7 seconds after the paper edge sensor detects the trailing edge of the paper.

**b) Paper eject delay jam**

A paper eject delay jam occurs if the paper eject sensor detects "no paper" between about 5 seconds after the paper edge sensor detects the leading edge of the paper and about 2.5 seconds after paper edge sensor detects the trailing edge of the paper. Fixing unit windup jams are also detected by this method.

When either of these jams are detected, **"CLEAR PAPER JAM"** is displayed. If the jam occurs during reception, the data is received in memory. If it occurs in memory copy mode, the image data in memory is cleared.

To clear a paper eject jam, open the front cover, and remove the jammed paper. Output resumes automatically when you close the front cover. If you remove the jammed paper without opening the front cover, open and close the front cover once to reset the printer.
When a fixing unit windup jam occurs, remove the delivery cover to access the jammed paper, then remove the jam.

### Paper delivery slot switching

The paper delivery slot can be switched by the paper delivery selector located at the bottom left on the front of the machine. After fixing, the paper is fed to the flapper, which guides it to one of two delivery slots. When the paper delivery selector is set to the up position, the flapper is lowered to guide paper to the face-down delivery slot. The paper is delivered face-down, so that pages are stacked in numeric order.

When the paper delivery selector is set to the down position, the flapper is raised to guide paper to the face-up delivery slot.
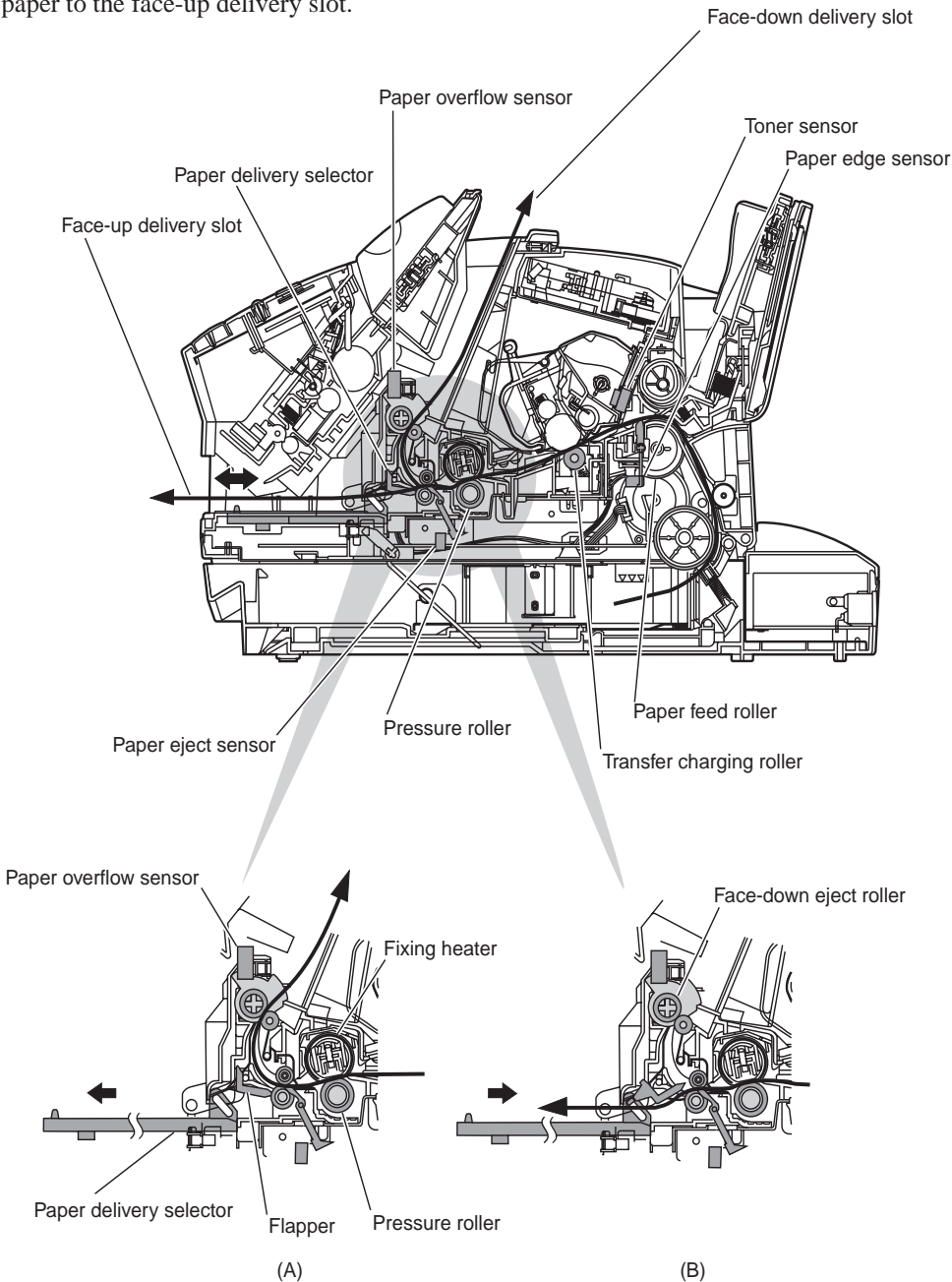


**Figure 2-6 Paper Delivery Slot Switching**

### Paper delivery

Always be sure to use the face-up delivery slot when recording onto envelopes, label paper or transparencies. Using the face-down slot can result cause jams and damage the recording medium.

**2-16**

# 5. ELECTRIC CIRCUIT

## 5.1 Component Block Diagram
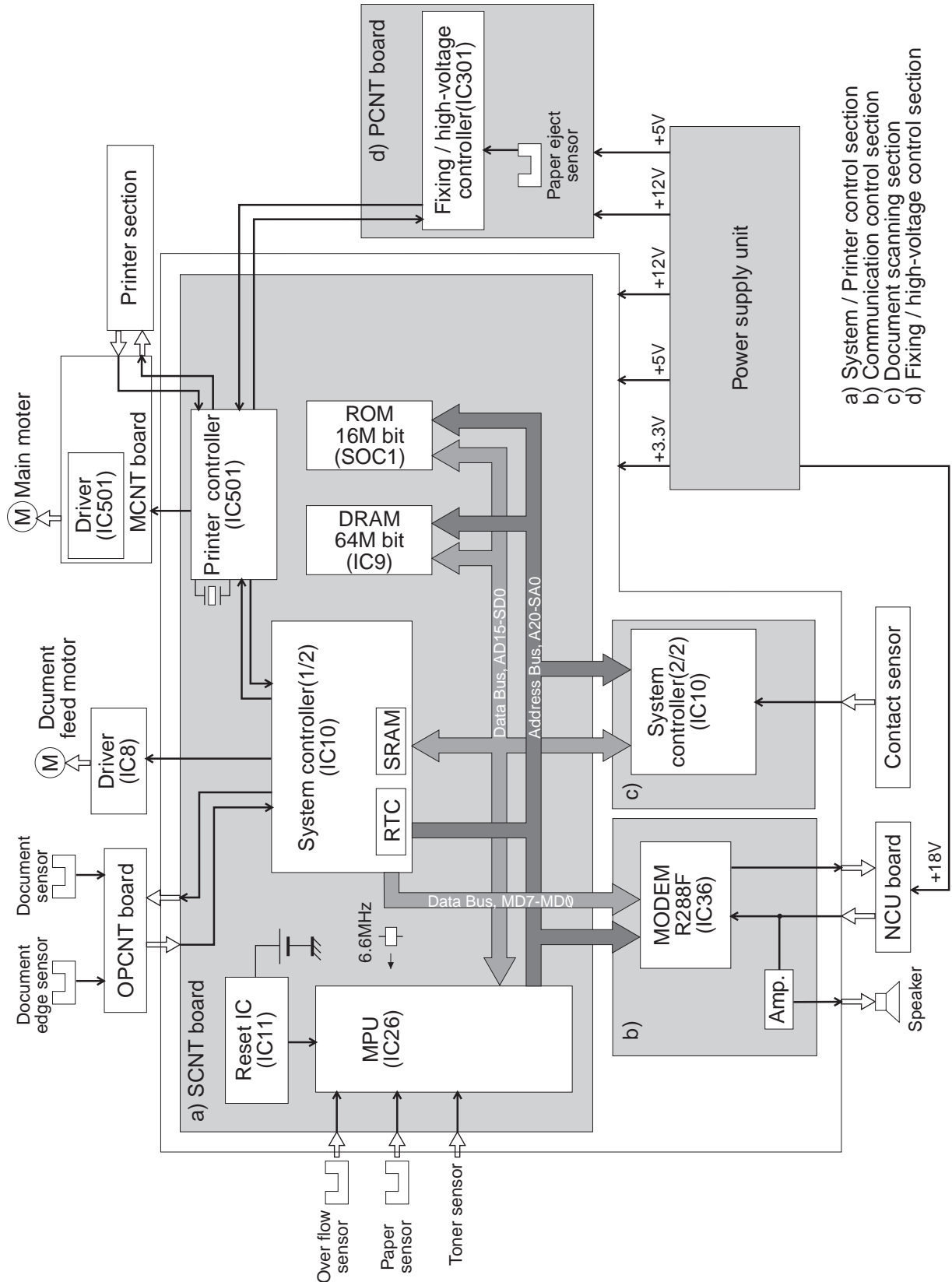


**Figure 2-7 Block Diagram**

## 5.2 Circuit Board Components

### a) System control section

The system controller is made up of the following components, and controls the entire fax system.

#### a-1) MPU (Micro Processor Unit) (IC26)

The main functions of the NEC μPD703102GJ-A33 MPU are as follows:

• 32 bit CPU

• 16 bit address bus

• 16 bit data bus

• DMA control

• A/D converter

• Software CODEC

• Interrupt control unit

#### a-2) System controller (IC10)

The system controller is a gate array for controlling MPU peripheral devices. The main functions of the system controller are as follows:

• Printer resolution conversion (Smoothing)

• LBP video interface

The LBP video interface transfers print signals to or from the printer controller and sends them to the MPU. The interface transmits an image signal (nVDO) and a vertical sync signal (nTOP) to the printer section, receives a horizontal sync signal (nBD) and printer section status from the printer section and transfers them to the MPU.

• OPCNT serial interface

• DRAM/SRAM controller

  Controls DRAM/SRAM read/write and refreshing.

• Document feed motor control

• Reduction in vertical scanning

• Recording decoder

• Pickup solenoid control

• RTC (Real Time Clock) control

  The RTC is backed up by lithium battery, and counts the data and time.

• SRAM

  SRAM is backed up by lithium battery. SRAM holds data registered for system control and communications management information.

#### a-3) Main ROM (SOC1)

This 16 Mbit ROM contains the control programs (e.g. operation panel, scanner and communications section etc.) for this fax.

#### a-4) DRAM (IC9)

This 64 Mbit is used as memory for storing image data, and as an MPU work area.

### b) Communication control section

#### Modem IC (IC36)

A Conexant R288F-26 (PLCC type) is used as the MODEM IC. The MODEM IC carries out G3 modulation conforming to ITU-T standards V.34, V.29, V.27ter, V.21 and V.8 on transmitted data received from the MPU during transmission. During reception, the MODEM IC carries out G3 modulation on received signals from the telephone line, according to the same standards.

### c) Document scanning section
#### c-1) System controller (IC10)

The system controller IC include image processing function (UHQ) are as follows:

- Serial-to-parallel conversion
- A/D conversion

  Input signals from the contact sensor are A/D converted.
- ABC(Auto Background Control)

  Sets the slice level for each scan line.
- Edge enhancement processing
- Binaryzation processing
- Halftone processing

### d) Printer control section (SCNT board)

The printer control section is made up of the printer controller IC (IC 501). The printer controller IC is a microcomputer that incorporates a Fujitsu MBCU34102-105 8kbyte ROM and a 256byte RAM. The ROM contains printer control software to control LBP operations.

The printer control section receives commands from the system controller IC and controls paper pickup and loading, and the LASER/scanner unit.

The printer control section transfers the signal received from the printer section to the system controller IC as printer status.

The printer controller IC has the following other functions:

- Main motor control
- Fixing heater control
- Fixing heater temperature detection
- BD signal detection
- LASER drive control
- APC control
- Scanner motor, fixing ass'y, or BD failure detection
- Control of high-voltage power supply

### e) Fixing/high-voltage controller (IC301)
#### Fixing heater control

The overvoltage prevention function is available to control power supply to the fixing roller heater using a heater drive signal (FSRD) from the SCNT board, detect resistance value of the thermistor in the fixing roller heater, prevent fixing roller heater temperature rise using a thermal fuse, protect the print PC board against overvoltage.

#### High-voltage power supply

The high-voltage power supply provides the high voltage required for primary charging, development, and transfer using a control signal from the SCNT board.

### 5.3 Flow of Image Signals

#### a) G3 transmission

(1) With the LED as a light source, the image is scanned by the contact sensor, and analogue image data sent to the SCNT board.

(2) The System controller IC (Internal UHQ unit) converts analogue image data from the contact sensor to digital image data.

(3) The system controller IC converts processed image data from serial data to parallel data, and writes them to the DRAM.

(4) The MPU encodes raw data in the DRAM using a soft codec, and rewrites the encoded data into the DRAM.

(5) The MODEM IC modulates the coded image data.

(6) The modulated data are then sent from the MODEM IC to the NCU board.
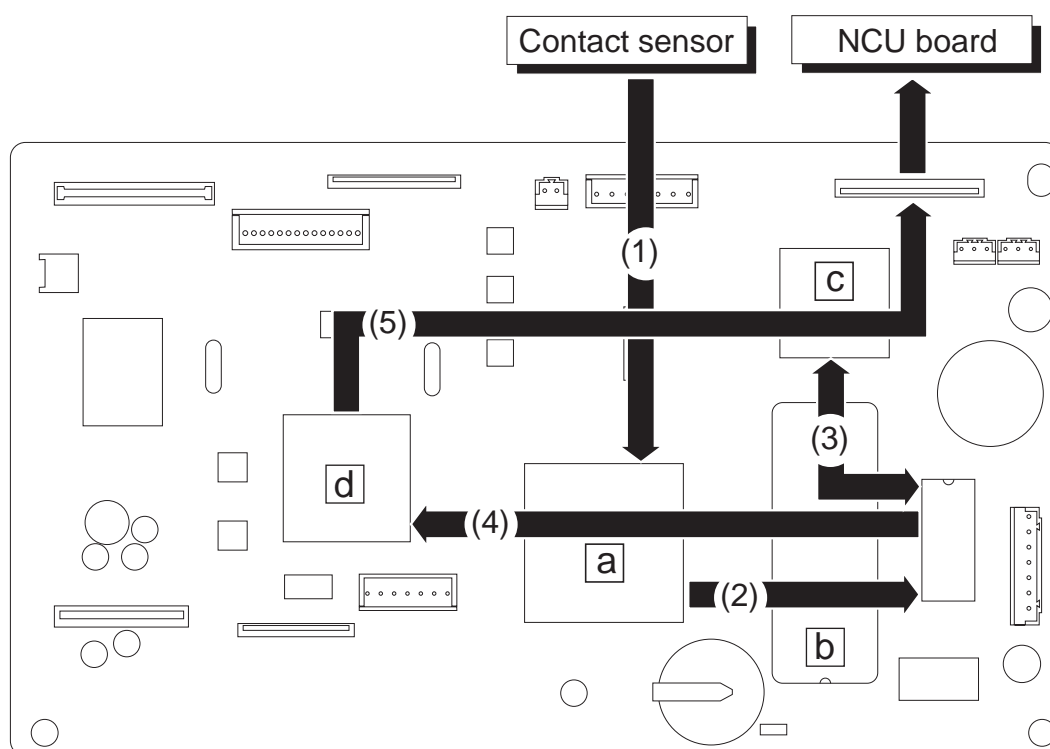


| | |
|---|---|
| a | System controller IC |
| b | DRAM |
| c | MPU |
| d | MODEM IC |

**Figure 2-8 G3 Transmission Image Signal Flow**

**b) G3 Reception**

(1) Image signals received by L1, L2, pass through the hybrid circuit in the NCU, and are amplified.  The modem demodulates these image, and writes them to the DRAM.

(2) The MPU decodes the demodulated image data, checks errors, stores it in the DRAM,  encodes the data and rewrites it into the DRAM.

(3) After one page is received, the encoded data in DRAM is decoded by the system controller IC.

(4) The system controller IC then converts the resolution of the fax data to the appropriate resolution for the printer data, and send it to the printer controller IC on the SCNT board.

(5) The printer controller IC prints data by controlling the main motor, LASER, and high voltage according to the received print data.
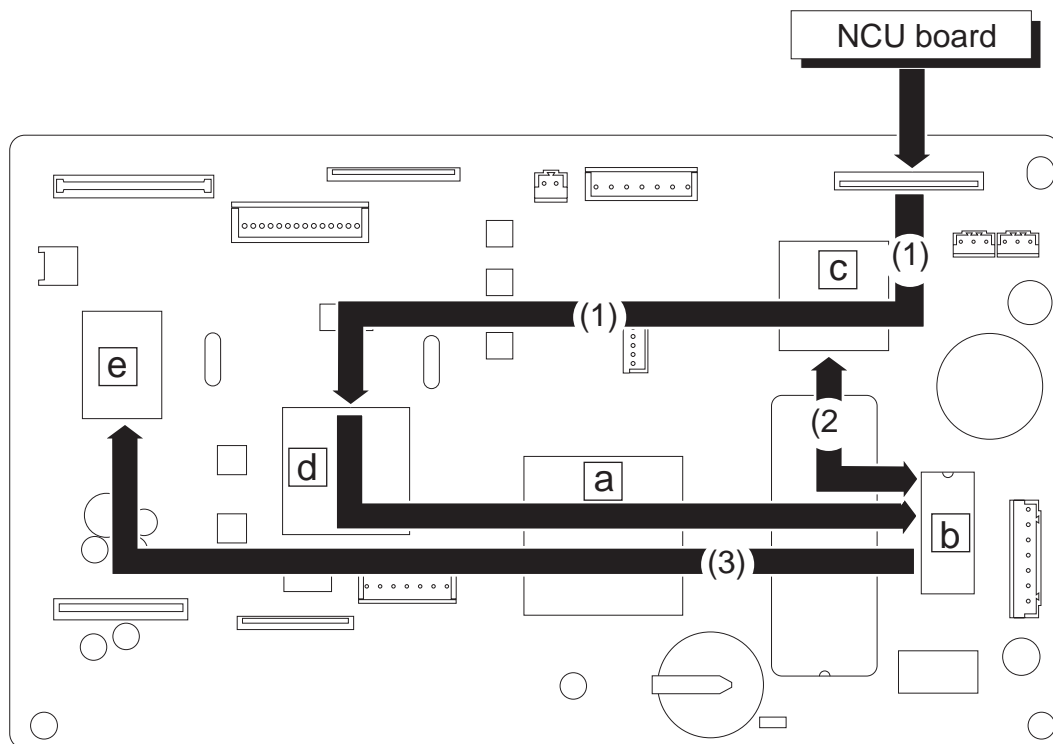


| | |
|---|---|
| a | System controller IC |
| b | DRAM |
| c | MPU |
| d | MODEM IC |
| e | Printer controller IC |

**Figure 2-9 G3 Reception Image Signal Flow**

# 6. COMMUNICATION SYSTEM OPERATIONS

## 6.1 FAX/TEL Switching

This fax is set to automatically switch between fax and telephone, on the same telephone line. If the other party is a fax, the fax is received automatically, and if the other party is a telephone, the alarm in the main unit is rung to alert the user. This fax sends a pseudo-RBT to the sender during FAX/TEL switching. It sounds a pseudo-bell when the other party is a telephone.

### 6.1.1 Settings

(1) Press the *Receive MODE* button to select Fax/Tel mode.
(2) Set the parameters in **"Receive Mode"** menu.

### 6.1.2 Parameters

| Item | Default setting | Setting switch | Selection range |
|------|-----------------|----------------|-----------------|
| RING START TIME (Pseudo Ring start time) | 8 sec | User data | 0 to 30 sec |
| F/T RING TIME (Pseudo Ring time) | 22 sec | User data | 10 to 60 sec |
| F/T SWITCH ACTION (Operation after FAX/TEL switching) | RECEIVE | User data | RECEIVE/ DISCONNECT |
| Pseudo RBT frequency | 400 Hz | None | None(fixed) |
| Pseudo RBT transmission from CML on time until start (CNG detection time) | 4 sec | Service data #3 16 | 0 to 9 sec |
| Pseudo RBT pattern on time | 1000 ms | Service data #3 17 | 0 to 9990 ms |
| Pseudo RBT pattern off time (short) | 0 ms | Service data #3 18 | 0 to 9990 ms |
| Pseudo RBT pattern off time (long) | 4000 ms | Service data #3 19 | 0 to 9990 ms |
| Pseudo RBT transmission level | -10 dBm | Service data #3 24 | -15 to 0 dBm |
| Pseudo ring frequency | 25 Hz | Service data #2 10 | 17 Hz/25 Hz/50 Hz |
| Pseudo ring pattern on time | 1000 ms | Service data #3 20 | 0 to 9990 ms |
| Pseudo ring pattern off time (short) | 0 ms | Service data #3 21 | 0 to 9990 ms |
| Pseudo ring pattern off time (long) | 4000 ms | Service data #3 22 | 0 to 9990 ms |

## 6.2 Answering Machine Connection

This connection is for effective use of an answering machine connected to the extension telephone jack. If the other party is a telephone, the answering telephone records the message, and if the other party is a fax, the fax receives automatically.

### 6.2.1 Settings

(1) Connect the answering machine to the extension telephone jack, and set the answering machine to **"AN-SWER"**.

(2) Press the fax's *Receive MODE* button and select the **ANS.MACHINE MODE**.

### 6.2.2 Parameters

| Item | Default setting | Setting switch | Selection range |
|---|---|---|---|
| Signal detection time | 60 sec | Service data #3 25 | 0 to 999 sec |

## 6.3 Manual/Auto Reception Switching

Determines if the fax switches to document receive mode after the fax rings for a specified time when the fax is in the manual receive mode.

### 6.3.1 Settings

(1) Set the **"MAN/AUTO SWITCH"** in the user data **"RX MODE"** to **"ON"**.

(2) Set the number of seconds that the fax will wait after detecting ringing signal from the telephone line before going into reception, using user data **"F/T RING TIME"** in **"MAN/AUTO SWITCH"**.

### 6.3.2 Parameters

| Item | Default setting | Setting switch | Selection range |
|---|---|---|---|
| MAN/AUTO SWITCH | OFF | User data | ON/OFF |
| F/T RING TIME | 15 sec | User data | 1 to 99 sec |

# 7. NEW FUNCTION

## 7.1 High-speed Transmission

The image transmission time is reduced drastically compared with the previous models by the V.34 modem (maximum transmission speed 33600 bps) recommended by ITU-T.

### 7.1.1 V.8/V.34 protocol

#### a) Outline

- The V.8 protocol is used as the startup protocol to move to V.34.  The V.8 protocol enables connection with fax machines, data modem and equipment using existing V-series modems.  The V.34 modem contains a modem circuit based on the previous recommendation to connect with the previous modems and has upper compatibility.

- The actual data transmission speed is improved entirely on average by speeding the modulation method and utilizing new techniques, such as the pre-emphasis technique[1] for increasing the S/N (signal-to-noise) ratio and the probing technique[2] for measuring line characteristics and optimizing the modem operation according to the line condition.

- The V.8 protocol, V.34 pre-protocol and post-protocol use full-duplex transmission to speed the processing.

- Fourteen image transmission speeds[3] are available:
  33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, and 2400 bps

- The modulation speed (baud rate)[4] can be selected from among 2400, 3000, and 3200 symbols/sec (required) or 2743, 2800, and 3429 symbols/sec (option).  The data transmission speed can be set more finely than the previous modems.

**NOTE**

*1 The output level of a high-frequency zone with comparatively high noise is raised, and then the transmission signal is sent.

*2 A tone signal known as a probing signal (L1 and L2) is output, and the receiving side measures the characteristics of the line.

*3 The data signaling rate is recorded in the ITU-T standards manual. Image transmission speed means the same as data signaling rate.

*4 The symbol rate is recorded in the ITU-T standards manual. Symbol rate means the same as moderation speed and baud rate.

2743 symbol/sec cannot be used with this fax.

**NOTE**

1. The V.34 protocol uses ECM. If the ECM SW in user data is set to OFF, the V.8 protocol is not executed. Therefore, the V.34 protocol is not used, and V.17 or a lower protocol is selected.

2. If the transmission speed is set to 14400 bps or lower, the V.8 protocol is not executed and V.17 or a lower protocol is selected.

3. After the V.21 protocol is selected first, it can be changed to V.8 or V.34. (See c-1) )

4. When the V.34 protocol begins, it falls back within the V.34 protocol, but it does not fall back to the V.17 mode or lower.

**b) Typical protocol**

TX          RX

CNG ← Connected to the line

**Network interaction (Phase 1)**
*(See page 2-27)*

ANSam

CM          JM

CJ

V.8

Declares the usable modulation mode.
Declares that V.34 capability exists on each machine, and transfers the V.34 procedures with phase 2.

**Probing (Phase 2)**
*(See page 2-28)*

INFO0c  INFO0a
B          A
            Ā
B̄
L1
L2
B          A
            INFO0h

After declaring the modem's modulation speed capacity, etc. to each machine, the receiving side determines the modulation speed based on the results of an probing signal output by the transmitting side.

**Primary channel equalizer training (Phase 3)**
*(See page 2-29)*

S
S̄
PP
TRN

The transmitting side outputs a training signal to determine the image transmission speed.

**Control channel start-up (Phase 4)**
*(See page 2-29)*

PPh          PPh
ALT          ALT
MPh          MPh
MPh          MPh
E            E
             NSF
flags        CSI
             DIS

The optimum image transfer speed is determined by the condition in which the training signal is received.

**Control channel**
*(See page 2-30)*

NSS
TSI          flags
DCS
flags        CFR
             flags
"1"

V.34

The pre-message protocol is done in the same way as a normal T.30, at 1200bps.

**Primary channel resyncronization procedure**
*(See page 2-31)*

S
S̄
PP
B1

The training signal is output with the determined parameters, and continues to transmit the image data.

**Image data**
*(See page 2-31)*

Image data

Turn-Off

**Control channel resyncronization procedure (Communication end procedure)**
*(See page 2-32)*

Sh          Sh
S̄h          S̄h
ALT          ALT
E            E
PPS-EOP      flags
             MCF
flags
DCN          flags
"1"

The post-message protocol is done in the same way as a normal T.30, at 1200bps.

Line released → ← Line released

**Figure 2-10 Typical Protocol**

**2-26**

**b-1) Network interaction (Phase 1)**

The V.8 protocol is used as the startup protocol for high-speed modem V.34.

The V.8 protocol determines the best modulation method (V-series modem mode) that is available between the transmitter and receiver.

**• Transmitter**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| Calling tone | CNG | 1100-Hz tone signal specified by T.30 to identify an automatic-calling fax machine. | |
| Dial-tone menu signal | CM | Indicate an available modulation method (V.21, V.27ter, V.29, V.17, or V.34). | Modulated by V.21(L)[*1]. |
| CM terminator | CJ | Indicate JM signal detection and CM signal termination. | Modulated by V.21(L)[*1]. |
| Dial-Tone display signal | CI | Indicate the general transmission function. Sent to resume the V.8 protocol. | Late start only. (See *Figure 2-11*.) Modulated by V.21(L)[*1]. |

**• Receiver**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| Modified response tone | ANSam | 2100-Hz tone signal amplitude-modulated by 15 Hz. | Equivalent to CED for previous models. |
| Common menu | JM | Indicate the terminal type, such as a fax machine, and an available modulation method in response to the available modulation method reported by the CM from the transmitter. | Modulated by V.21(H)[*1]. |

[*1]  V.21(L):  Low-frequency channel defined by V.21 recommendation
  1080±100 Hz (980 Hz:1, 1180 Hz:0)
  Transmission speed: 300bps

  V.21(H):  High-frequency channel defined by V.21 recommendation
  1750±100 Hz (1650 Hz:1, 1850 Hz:0)
  Transmission speed: 300bps

### b-2) Probing (Phase 2)

The line characteristics are measured and modulation-related parameters, such as symbol rate, are set.

• **Transmitter**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| INFO sequence | INFO0c | Indicate modem capabilities, such as baud rate and frequency transmission function (two frequency bands used to measure line characteristics), and request adjustment. | Transmission speed: 600bps |
| Tone B | B | Modem synchronization with a 1200-Hz tone signal. | The phase of the B-signal is inverted 180 degrees from the phase of the B signal. |
| Tone $\overline{B}$ | $\overline{B}$ | | |
| Probing signal L1 | L1 | Tone signal for analyzing line characteristics by probing. | Probing: Measurement of line characteristics. Tone signal in the range 150 to 3750 Hz in 150-Hz steps. |
| Probing signal L2 | L2 | | |

• **Receiver**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| INFO sequence | INFO0a | Report the modem capabilities, such as baud rate and frequency transmission ability. | Transmission speed: 600bps |
| Tone A | A | Modem synchronization with a 2400-Hz tone signal. | The phase of the A-signal is inverted 180 degrees from the phase of the A signal. |
| Tone $\overline{A}$ | $\overline{A}$ | | |
| INFO sequence | INFO0H | Report the pre-emphasis filter and baud rate used for data transmission based on the result of analysis of the probing signal. | Transmission speed: 600bps |

### b-3) Primary channel equalizer training (Phase 3)

Filters, such as equalizers, are trained (adjusted) with the parameters set in phase 2.

#### • Transmitter

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| S signal | S | Short training | The phase of $\bar{S}$ is shifted from the phase of S. |
| $\bar{S}$ signal | $\bar{S}$ | | |
| PP signal | PP | The other modem uses this signal to train the equalizer. | |
| TRN signal | TRN | The receiver uses this signal to determine the transmission speed. | |

### b-4) Control channel start-up (Phase 4)

Select the maximum data signalling rate and trellis encoder and set the data signalling rate that can be supported.

#### • Transmitter/receiver

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| PPh signal | PPh | The other modem uses this signal to train the equalizer. | |
| ALT signal | ALT | ———— | |
| Modulation parameter | MPh | Indicate the image transmission parameters, such as maximum data signal speed, control channel data signal speed, trellis coding type, precoding type, and baud rate. | |
| E sequence | E | ———— | 20-bit sequence of binary 1's |

**b-5) Control channel**

The conventional T.30 protocol is executed.

The transmission speed is 600bps.

**• Transmitter**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| Flag | flags | Maintain synchronization | 7E (H) |
| Non-standard facilities set-up | NSS | Receive NSF from the other party, select an available mode from it, and instruct reception. | |
| Transmitting subscriber identification | TSI | Report the transmitter telephone number. | |
| Digital command signal | DCS | Instruct the available mode. | |
| _____ | 1 | Declare to switch to high-speed protocol | Transmit 1'S |

**• Receiver**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| Non-standard facilities | NSF | Report functions not recommended by ITU-T, user's ID, manufacturer code, etc. | |
| Called subscriber identification | CSI | Report the receiver telephone number. | |
| Modulation parameter | DIS | Report standard ITU-T-recommended functions. | |
| Flag | flags | Maintain synchronization. | 7E (H) |
| Confirmation to receive | CFR | Report that modem training ends and image signal reception is ready. | |

**NOTE**

In the control channel, signals which differ according to the frequencies of both TX and RX are output. It follows that the effects of the echo are not received because the frequencies of the signal returned by echo and the signal output by the other machine are different.

### b-6) Primary channel resyncronization procedure

Training is performed with the parameters set in phase 4.

The transmission speed is 1200bps.

#### • Transmitter

| Signal | Abbreviation | Meaning | Remarks |
|--------|--------------|---------|---------|
| S signal | S | Short training | The phase of $\bar{S}$ is shifted from the phase of S. |
| $\bar{\bar{S}}$ signal | $\bar{\bar{S}}$ | | |
| PP signal | PP | The other modem uses this signal to train the equalizer. | |
| Sequence B1 | B1 | Scramble data frame transmitted at the end of start-up protocol. | |

### b-7) Image data

Transmit image data.

#### • Transmitter

| Signal | Abbreviation | Meaning | Remarks |
|--------|--------------|---------|---------|
| Image data | Image data | Encoded image data | |
| _____ | Turn-off | _____ | Send scrambled 1's for 35 ms. |

**2-31**

**b-8) Control channel resyncronization procedure (Communication end procedure)**

Protocol for terminating transmission.

The transmission speed is 1200bps.

**• Transmitter**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| Sh signal | Sh | Short training | |
| $\overline{\overline{\text{Sh}}}$ signal | $\overline{\overline{\text{Sh}}}$ | | |
| ALT signal | ALT | ———— | |
| E sequence | E | ———— | |
| End of procedures | PPS-EOP | One page is transmitted. | |
| Flag | flags | Maintain synchronization. | 7E (H) |
| Disconnect signal | DCN | Disconnect the line. | |

**• Receiver**

| Signal | Abbreviation | Meaning | Remarks |
|---|---|---|---|
| $\overline{\overline{\text{Sh}}}$ signal | $\overline{\overline{\text{Sh}}}$ | Short training | |
| Sh signal | Sh | | |
| ALT signal | ALT | ———— | |
| E sequence | E | ———— | |
| Flag | flags | Maintain synchronization. | 7E (H) |
| Message confirmation | MCF | Indicate that the receiver has received the image signal correctly and can receive the next document immediately. | |

**2-32**

### c) Examples of sequences

The signals in the shaded areas are important in the protocol.

### c-1) Late start

Since the receiver cannot detect the CM signal while sending the ANSam signal, it sends the DIS signal containing the "V.8 protocol" declaration. The transmitter sends the CI signal to request the receiver to send the ANSam signal again to move to V.8 protocol.
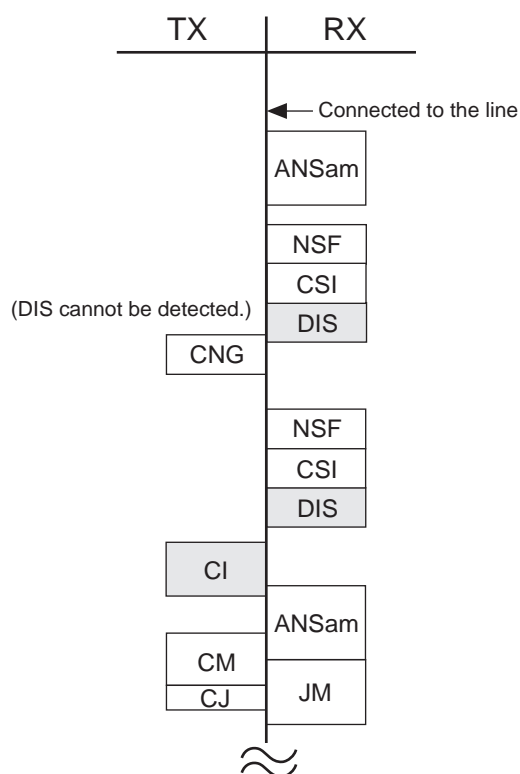


**Figure 2-11 Late Start**

### c-2) Between-page sequence

The transmitter sends image data, then the PPS-MPS signal in the same as for the T.30 protocol. The receiver sends the MCF signal to receive the next page.
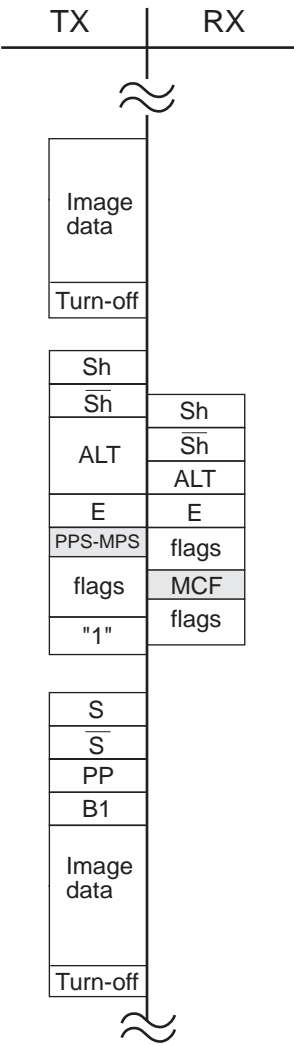


**Figure 2-12 Between-page Sequence**

**c-3) Mode change**

The transmitter sends PPS-EOM and the receiver sends the MCF signal. Then the receiver sends the DIS signal and the transmitter sends the DCS signal to change the mode.
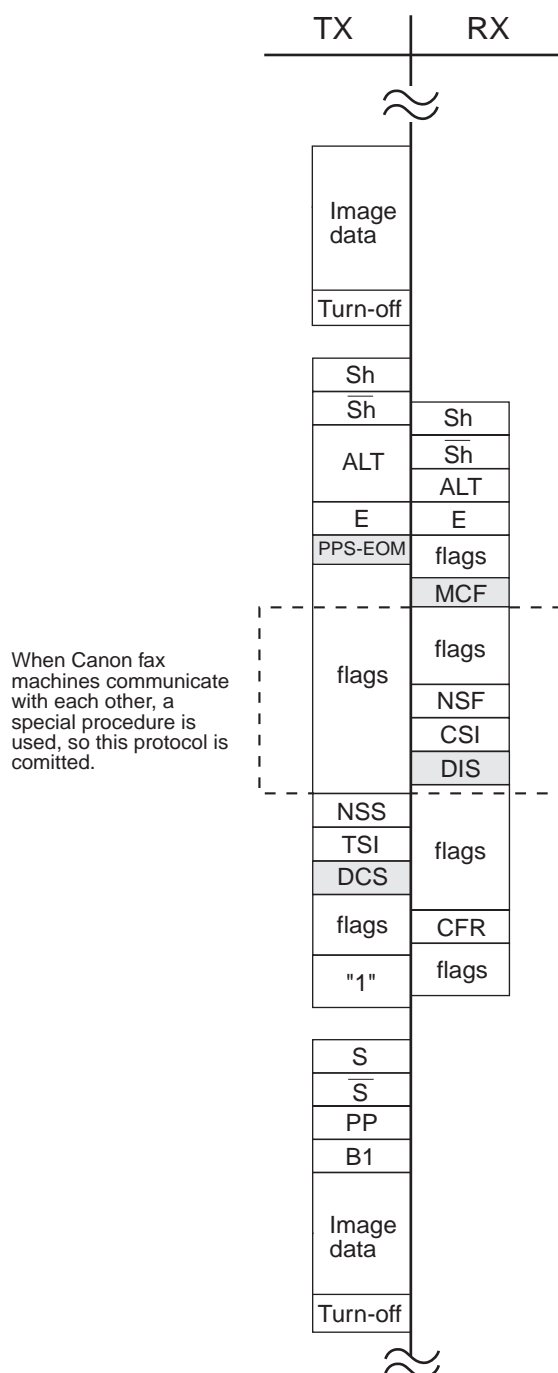
**Figure 2-13 Mode Change**

**c-4) Image transmission speed change from the receiver**

The receiver returns to the PPh signal in response to the Sh signal from the transmitter.  The image transmission speed is then determined by the MPh sequence sent from both modems.
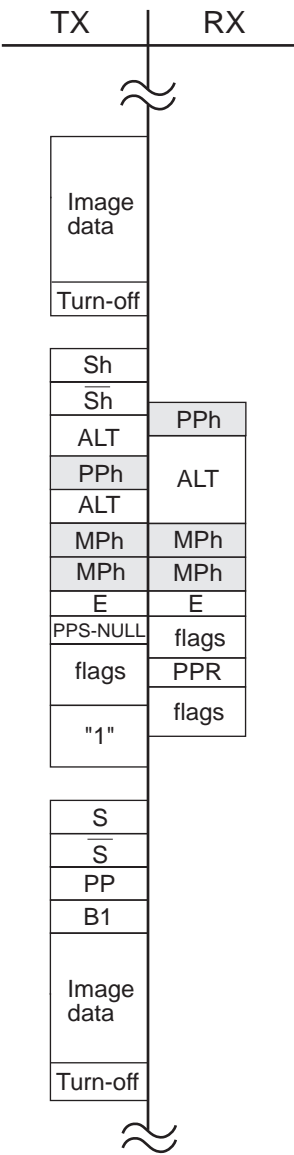


**Figure 2-14 Image Transmission Speed Change from the Receiver**

**c-5) Image transmission speed change from the transmitter**

The transmitter sends image data, and then the PPh signal, and the receiver returns the PPh signal to the transmitter.  The image transmission speed is then determined by the MPh sequence sent from both modems.
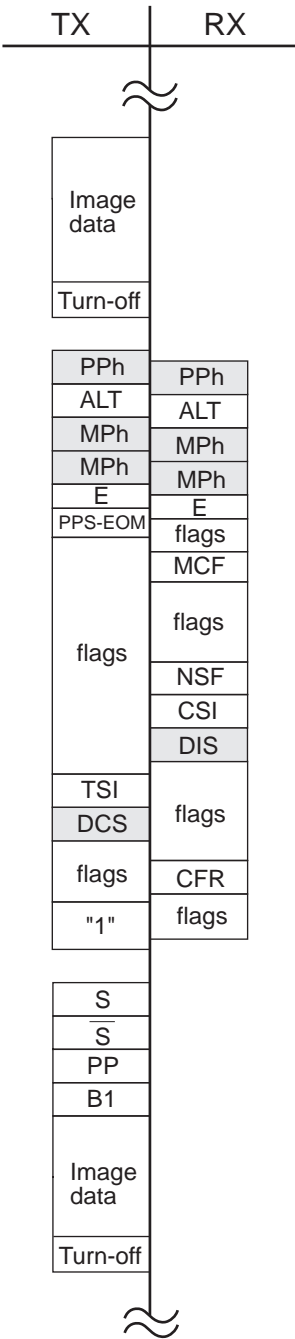


**Figure 2-15 Image Transmission Speed Change from the Transmitter**

## 7.2 JBIG Image Compression Encoding Method
### 7.2.1 Outline of the JBIG image compression encoding method

The JBIG Image Compression Encoding Method is recommended in ITU-T T.82/T.85 as a new bi-level (bi-level: White and Black) image compression encoding method developed by JBIG (Joint Bi-level Image experts Group).

The JBIG Image Compression Encoding Method has the following characteristics with regards to text documents, quasi-gray scale images with little continuous black and white, and gray scale images which use a dithering method: a higher compression rate (1.1 ~ 30 times higher) than the conventional MMR compression method, the encoded volume will not exceed the volume of original image information after compression, and when decoding, the image can be completely re-assembled to its original condition in the same way as with conventional MR/MMR.

The JBIG Image Compression Encoding Method contains Progressive Bi-level Image Compression for searching image databases, recommended in ITU-T T.82, and Single Progression Sequential Bi-level Image Compression for facsimile, recommended in ITU-T T.82 and T.85.

Images will take on the form shown below.
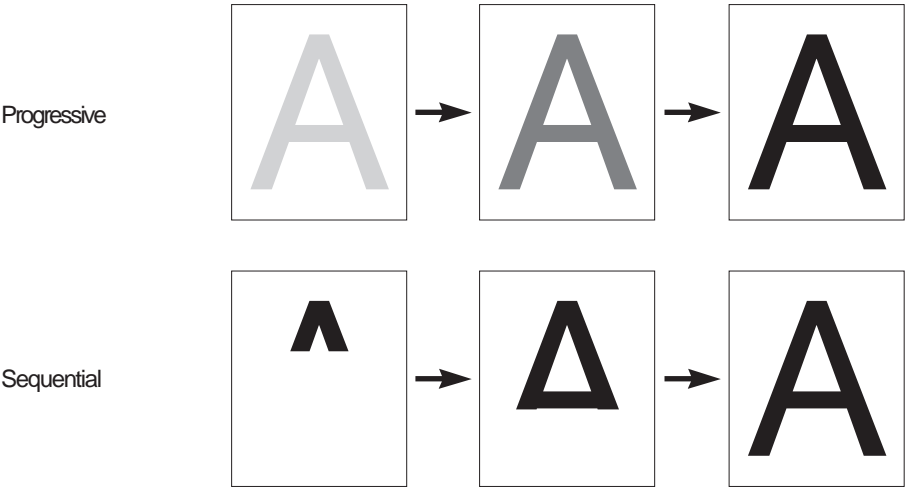
**Figure 2-16 Images**

**NOTE**

The characteristics of Progressive Bi-level Image Compression are explained below as a reference. First of all, after the original image has been read in at high resolution, it is converted to low resolution, and this low resolution image data proceeds to be encoded (compressed). On the receiving end, the overall original image can be quickly recognized by the steps in which this low resolution image compression data is received.

Next, to improve the quality of the low resolution image already sent, only information needed to improve the resolution is forwarded. The previous low resolution image is decoded on the receiving side with this information, and following this, the high resolution image is displayed on top of the previous low resolution image.

It is easy to quickly recognize the original image in the process of displaying the image from low resolution to high resolution in order by using this method, with a CRT display for example. Also, according to the situation, it is possible to interrupt the image transfer at the point where the original image is recognized to some degree by the receiving side.

This method requires a page buffer memory for the low resolution image because the low resolution images are used for the purpose of high resolution image encoding.

## 7.2.2 Single progression sequential bi-level image compression method

The Single Progression Sequential Bi-level Image Compression Method used in this fax is explained below. The Progressive Bi-level Image Compression Method uses multiple resolution layers on a single page (multi-level layers, low resolution layers~high resolution layers) to perform encoding/decoding. In the Single Progression Sequential Bi-level Image Compression Method, encoding is done in units of horizontal bands (a number of lines) called stripes, and is performed from left to right, top to bottom (this condition is called sequential), and in one resolution layer (single layer).

**NOTE**

In this method, the encoding is done in stripe units, so it is completed with a buffer memory much smaller than a page buffer memory.

The methods by which encoding takes place and by which image data is constructed after encoding are explained below.

### 7.2.3 Encoding method

In the JBIG encoding used in the Single Progression Sequential Bi-level Image Compression Method, uses in the encoder shown below to encode to the original the results of comparison of the line currently being processed and the previous line, as well as the predicted value of an image pixel (white or black) used in a model template.

The study table used in the prediction makes the next prediction more accurate by learning and correcting the study table every time the model template moves to the adjoining pixel. It is characteristic of this method that if the prediction is accurate the amount of encoding will not increase, and if the prediction is off the amount of encoding increases, so the increase in prediction accuracy of this study table is very important. An outline of the encoding procedure is shown below.
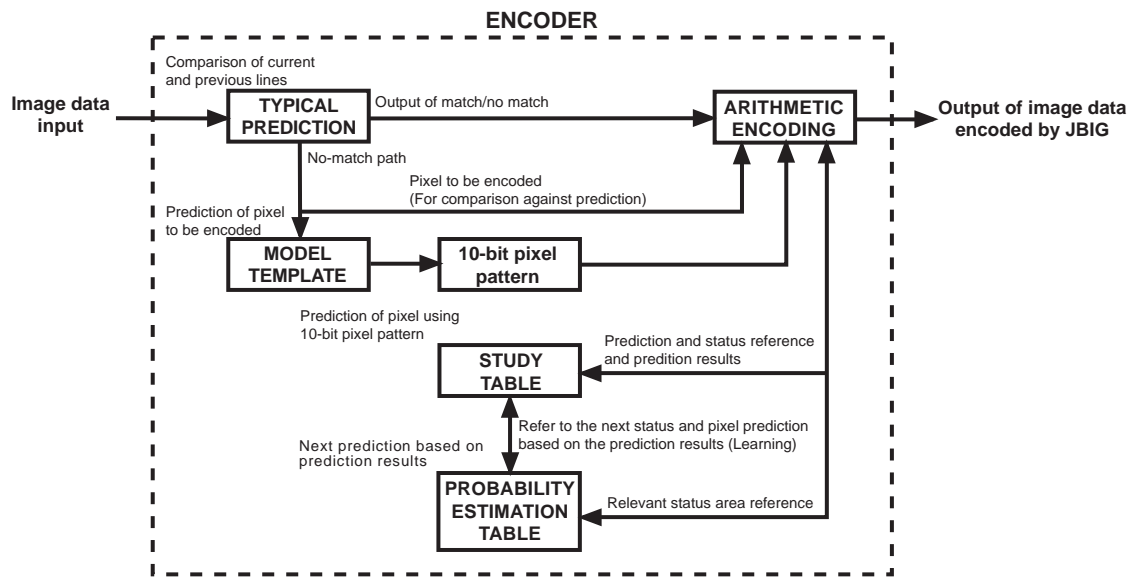


**Figure 2-17 Encoder and Flow of JBIG Encoding**

a)  In the pattern prediction section, the line currently being processed and the current line are compared, and judged to match or not match. A flag showing whether or not the lines match (1 bit, 0: match, 1: don't match) is attached to the head of each line according to this judgment. When the lines match, only this flag is encoded in the arithmetic encoding section as a suspected pixel, the pixel of the line being currently processed is not encoded. When the lines do not match, the pixel of the line currently being processed is encoded in the arithmetic encoding section based on the results of a comparison of the value of the actual pixel and the pixel (white or black) which is predicted using the model template and the study table.

**NOTE**

When the lines are judged to match, the line currently being processed is said to be **"typical"** . When the lines are judged to not match, the line is said to be **"not typical"** . When the very first line of an image is predicted, the background color is used as the previous line.

b) In the model template, the combination (10-bit pixel pattern) of 10 pixels is output to the arithmetic encoding section using the template shown below (inside the bold outline).

All of the 10-bit pixel patterns inside this template exist in the study table. This 10-bit pixel pattern is used by the arithmetic encoding section to refer to the predicted value of the pixel and the status number in the study table which correspond to the 10-bit pixel pattern.



3-line model template      2-line model template
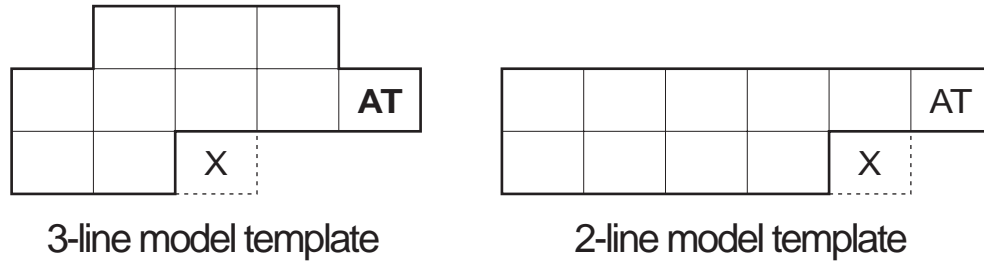
**Figure 2-18 Model Templates**

**NOTE**
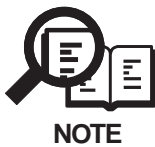
There are two types of model templates 3-line and 2-line, and the one selected is designated by the LRLTWO inside the Bi-level Image Header section (BIH). The pixel shown by **"X"** is an encoded pixel and is outside of the template.

The pixel shown by **"AT"** is a special pixel known as an AT pixel. The AT pixel becomes a Adaptive Template by having its position moved, and is very effective when encoding a periodic pixel, similar to a dither pattern image.

The position of AT in the figure is the beginning position of the AT pixel.

In this fax, it remains fixed in this initial position, so Adaptive Template is not used.

c) The study table, as shown below, is constructed by all of the 10-bit pixel patterns output by the model template, and their corresponding status numbers and predicted values of the pixel to be encoded.

The predicted value of the pixel to be encoded and the status number is compared to the actual pixel in the arithmetic encoding section every time the model template is moved to the adjoining pixel.

The result of this comparison (matches / does not match predicted value) and the status number are then checked by comparison to the probability estimation table, and the study table is corrected (learned) to a new prediction value and status number which will be used when the same pixel pattern is found again.

By learning in this way, the probability of the study table matching the next time is increased, and the need for encoding decreased.

3-line model template                2-line model template
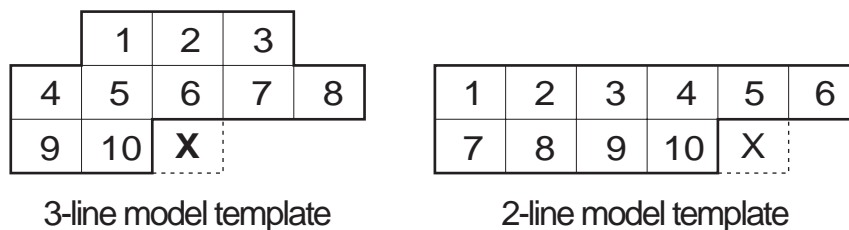
**Figure 2-19 Positions of Pixels in Model Template**

**Table 2-1 Study Table (Initial values)**

| Hex | Dec | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Predicted value of pixel | Status No. (ST) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 (white) | 0 |
| 001h | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 (white) | 0 |
| 002h | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 (white) | 0 |
| 003h | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 (white) | 0 |
| 004h | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 (white) | 0 |
| 005h | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 (white) | 0 |
| 3FBh | 1019 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 (white) | 0 |
| 3FCh | 1020 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 (white) | 0 |
| 3FDh | 1021 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 (white) | 0 |
| 3FEh | 1022 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 (white) | 0 |
| 3FFh | 1023 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 (white) | 0 |

Pixel pattern in the model template

**Table 2-2 Probability Estimation Table**

| ST | LSZ | NLPS | NMPS | SWITCH | ST | LSZ | NLPS | NMPS | SWITCH |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 5A1Dh | 1 | 1 | 1 | 57 | 01A4h | 55 | 58 | 0 |
| 1 | 2586h | 14 | 2 | 0 | 58 | 0160h | 56 | 59 | 0 |
| 2 | 1114h | 16 | 3 | 0 | 59 | 0125h | 57 | 60 | 0 |
| 3 | 080Bh | 18 | 4 | 0 | 60 | 00F6h | 58 | 61 | 0 |
| 4 | 03D8h | 20 | 5 | 0 | 61 | 00CBh | 59 | 62 | 0 |
| 5 | 01DAh | 23 | 6 | 0 | 62 | 00ABh | 61 | 63 | 0 |
| 6 | 00E5h | 25 | 7 | 0 | 63 | 008Fh | 61 | 32 | 0 |
| 7 | 006Fh | 28 | 8 | 0 | 64 | 5B12h | 65 | 65 | 1 |
| 8 | 0036h | 30 | 9 | 0 | 65 | 4D04h | 80 | 66 | 0 |
| 49 | 0706h | 79 | 50 | 0 | 106 | 50E7h | 108 | 107 | 0 |
| 50 | 05CDh | 48 | 51 | 0 | 107 | 4B85h | 109 | 103 | 0 |
| 51 | 04DEh | 50 | 52 | 0 | 108 | 5597h | 110 | 109 | 0 |
| 52 | 040Fh | 50 | 53 | 0 | 109 | 504Fh | 111 | 107 | 0 |
| 53 | 0363h | 51 | 54 | 0 | 110 | 5A10h | 110 | 111 | 1 |
| 54 | 02D4h | 52 | 55 | 0 | 111 | 5522h | 112 | 109 | 0 |
| 55 | 025Ch | 53 | 56 | 0 | 112 | 59EBh | 112 | 111 | 1 |
| 56 | 01F8h | 54 | 57 | 0 | | | | | |

ST:      Status number in the study table

LSZ:     Probability estimation value (range) for inaccurate prediction

NLPS:    Next status destination when a prediction is inaccurate

NMPS:    Next status destination when a prediction is accurate

SWITCH: Next prediction value reversed if SWITCH=1 when prediction is inaccurate

**2-42**

**Example:**

A brief explanation of how the study table works is given below.

It is assumed that each of the model template pixels 1~10 in the image below are white.

1.  In this case, the model template pixel pattern is 000h.
2.  The predicted value of pixel pattern 000h for pixel **"X"** is **"white"**, but it is actually black. Thus the prediction is **"inaccurate"**.
3.  The status ST is **"0"**, so the probability estimation table is consulted, and the next status is moved to **"1"**. At the same time, by the reversal of the predicted value, the next prediction is for **"black"**.

Original image

Study table for current pixel

| Pixel pattern | Predicted value | Actual value | Accurate/ Inaccurate | Status ST |
|---|---|---|---|---|
| 000h | 0 (white) | 1 (black) | Inaccurate | |
| 001h | 0 (white) | | | |
| 002h | 0 (white) | | | |

Study table for next pixel

| Pixel pattern | Predicted value | Actual value | Accurate/ Inaccurate | Status ST |
|---|---|---|---|---|
| 000h | 1 (black) | | | 1 |
| 001h | 0 (white) | | | 0 |
| 002h | 0 (white) | | | 0 |

Probability estimation table

| ST | LSZ | NLPS | NMPS | SWITCH |
|---|---|---|---|---|
| 0 | 5A1Dh | 1 | 1 | 1 |
| 1 | 2586h | 1 | 2 | 0 |
| 2 | 1114h | 1 | 3 | 0 |
| 3 | 080Bh | 1 | 4 | 0 |

X is actualy black

**Figure 2-20 Study Table Study Example 1**

4.  Next, the model template is moved to the adjoining pixel in order to perform the next prediction. At this time, pixels 1~9 of the model template are white, and pixel 10 is black.
5.  In this case, the model template pixel pattern is 001h.
6.  The predicted value of pixel pattern 001h for pixel **"X"** is **"white"**, and it is actually white. Thus the prediction is **"accurate"**.
7.  The status ST is **"0"**, so the probability estimation table is consulted, and the next status is moved to **"1"**. The prediction for the next pixel remains **"white"**.

Move to next pixel

Study table for current pixel

| Pixel pattern | Predicted value | Actual value | Accurate/ Inaccurate | Status ST |
|---|---|---|---|---|
| 000h | 1 (black) | | | 1 |
| 001h | 0 (white) | 0 (white) | Accurate | 0 |
| 002h | 0 (white) | | | 0 |

Study table for next pixel

| Pixel pattern | Predicted value | Actual value | Accurate/ Inaccurate | Status ST |
|---|---|---|---|---|
| 000h | 1 (black) | | | 1 |
| 001h | 0 (white) | | | 1 |
| 002h | 0 (white) | | | 0 |

Probability estimation table

| S | LSZ | NLPS | NMPS | SWITCH |
|---|---|---|---|---|
| 0 | 5A1D | 1 | 1 | 1 |
| 1 | 2586h | 14 | 2 | 0 |
| 2 | 1114h | 16 | 3 | 0 |
| 3 | 080B | 18 | 4 | 0 |

X is actualy white

**Figure 2-21 Study Table Study Example 2**

The study table is constantly updated in this way, increasing the probability of accurate predictions.

d)  The probability estimation table, published in the ITU-T T.82. Its contents are fixed, differing from those of the study table.

**NOTE**

This table shows probability of accuracy/inaccuracy in the form of a range, according to the accurate/inaccurate results of a given status prediction value.

The plan of the probability estimation table is such that if the prediction is accurate, the range of the next status number will be smaller than would be the case in an inaccurate prediction.

The status number with this smaller range will be selected to be the next status number.

e)  After the predicted value is found to be accurate/inaccurate by the actual pixel, the model template, and the study table, that accuracy/inaccuracy is encoded in the arithmetic encoding section, and the encoded image data is output.

f)  In the encoding (mathematical encoding) done in the arithmetic encoding section, there is no conversion table for encoding as is the case in encoding with conventional MH and MR. Using the LSZ (probability estimation value of an inaccurate prediction: the form of a range) of the probability estimation table and the accuracy/inaccuracy of the predicted value as a base, encoding is done by showing the position of the progress of the prediction on an integer line (between 0~1.0). Encoding shown as a position on this integer line, take a position under MPS in the case of accurate predictions, and under LPS in the case of inaccurate predictions, as shown in the figure below.

Furthermore, there is a concept of range (A) in this arithmetic encoding. This range (A) [*2] is shown as an MPS range in the case of accurate predictions and as an LPS range in the case of inaccurate predictions for each pixel. When these ranges (A) are below a certain range [*3], the leading edge bit (which excludes the encoding **"0"**. shown by the position on the integer line) shifts one position to the left as encoded image data, and is output. At this time, the limit of this range (A) which was below the certain range is narrow and it is difficult to show a position more detailed than this, so the range (A) is magnified [*4] to show it in more detail. This operation is called **"Renormalization"**, and this range (A) is reset to a value above a certain range [*3].

The concept of arithmetic encoding is simply explained below.

The following assumptions are made in order to make the explanation easy to understand.

The probability of accuracy will be 50%, and the probability of inaccuracy will be 50%.[1]

The area of accuracy will be MPS, and the area of inaccuracy will be LPS.
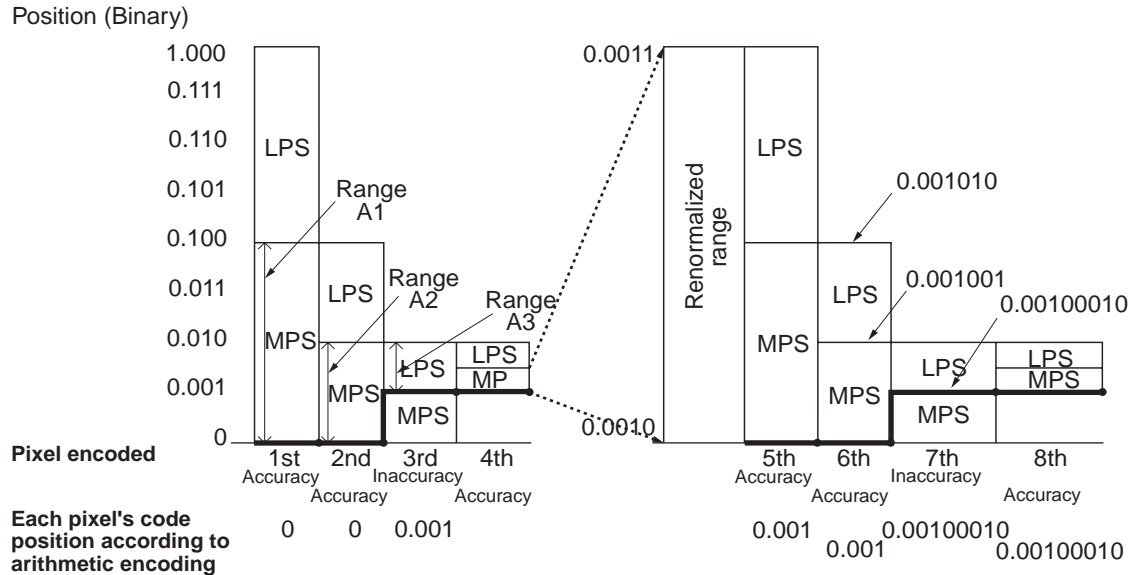


**Figure 2-22 Arithmetic Encoding Conceptual Diagram**

The special characteristic of this arithmetic encoding is that an additional encoding bit is not needed because the integer line position is the same as the integer line position of the previous encoding data in the case of an accurate prediction. It follows that the amount of encoding will not increase if accurate predictions continue, and the rate of compression will increase. Conversely, with inaccurate predictions, an additional encoding bit will be necessary to show the position of the inaccuracy in detail, and thus the amount of encoding will increase and the rate of compression decrease. In this way, the study table learns in order to increase the rate of accurate predictions and to reduce the amount of encoding and raise the compression rate during the encoding process, and then corrects the table parameters.

**NOTE**

[1] The actual probability varies with the status because of the extent to which LSZ occupies in the range (A).

[2] The actual range is hexadecimal 8000~10000.

In the case of an accurate prediction, range A1= hexadecimal 10000-LSZ, A2=A1-LSZ, and A3=A2-LSZ.

In the case of an inaccurate prediction, range A=LSZ.

[3] Actually, hexadecimal 8000.

[4] Actually, the hexadecimal value will be shifted to the left two times, and the hexadecimal will be over 8000.

Next, the encoding for continuous accurate predictions will be simply explained.

The assumptions below will be made for easy understanding.

The value of an accurate LSZ will be decimal 100[*1] in all statuses.

Range A will have limits of decimal 8000~10000[*2], and when range A is below decimal 8000[*3], the lead encoding bit will be pushed out, and the encoded image data will be output.

At this time, Range A will be adjusted so that it is over decimal 8000[*3] (decimal 1000[*4] added).

An accurate range will be MPS, and an inaccurate range will be LPS.

| Pixel No. encoded | 1 | 2 | 3 | 4 | 5 | 6 | | 19 | 20 | 21 | | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Accurate | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | | Yes |
| Encoding position | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Range initial position | 10000 | 9900 | 9800 | 9700 | 9600 | 9500 | | 8200 | 8100 | 8000 | 7900 | 8900 |
| Renormalization | | | | | | | | | | | 1000 | |
| New initial position | | | | | | | | | | | 8900 | |
| LS | 100 | 100 | 100 | 100 | 100 | 100 | | 100 | 100 | 100 | | 100 |
| Range A | 9900 | 9800 | 9700 | 9600 | 9500 | 9400 | | 8100 | 8000 | 7900 | | 8800 |
| Encoding output | No | No | No | No | No | No | | No | No | Yes | | No |
| Output encoding | | | | | | | | | | 1 bit 0 | | |

**Figure 2-23 When Predictions are Continually Accurate**

In this case, the encoding 1 bit is output for the first time when Range A falls becomes less than 8000 in the 21st pixel.

The following output encoding is shortened and its compression increased.

## 7.2.4 Construction of image data with JBIG image compression encoding

Images are encoded in block units called stripes, as shown in the figure below.
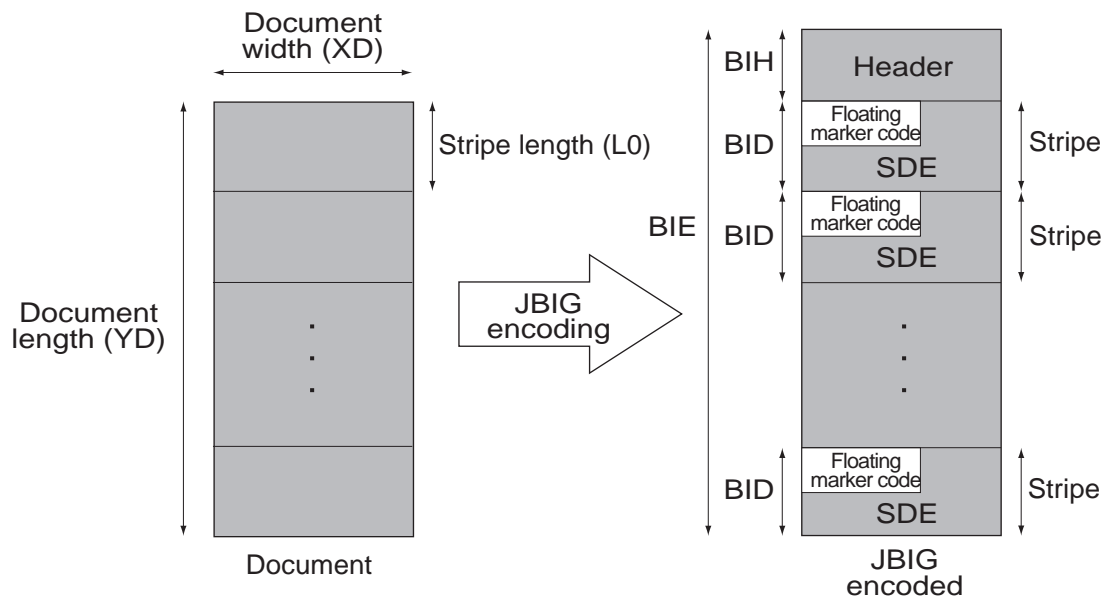


**Figure 2-24 Construction of JBIG Image Data**

After being encoded, the image data is referred to as BIE (Bi-level Image Entity), and is constructed from the Bi-level Image Header (BIH) section and the Bi-level Image Data (BID) section shown in the figure below.

| BIE (Bi-level Image Entity) | | | |
|---|---|---|---|
| BIH (Bi-level Image Header) | BID (Bi-level Image Data) | · · · · · | BID (Bi-level Image Data) |
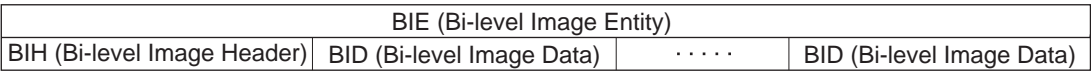
**Figure 2-25 BIE Construction Diagram**

### 7.2.5 Explanation of bi-level image header section (BIH)

The BIH is shown in the construction figure below. It designates the image size, number of lines per stripe, model template, etc.

| BIH (Bi-level Image Header) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|

| DL | D | P | FILL | XD | YD | L0 | Mx | My | Orber | Option | DPTABLE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1byte | 1byte | 1byte | 1byte | 4byte | 4byte | 4byte | 1byte | 1byte | 1byte | 1byte | 0/1728 byte |

| - | - | - | - | HITOLO | SEQ | ILEAVE | SMID |
|---|---|---|---|---|---|---|---|
| 1bit | 1bit | 1bit | 1bit | 1bit | 1bit | 1bit | 1bit |

| - | LRLTWO | VLENGTH | TPDON | TPBON | DPON | DPPRIV | DPLAST |
|---|---|---|---|---|---|---|---|
| 1bit | 1bit | 1bit | 1bit | 1bit | 1bit | 1bit | 1bit |
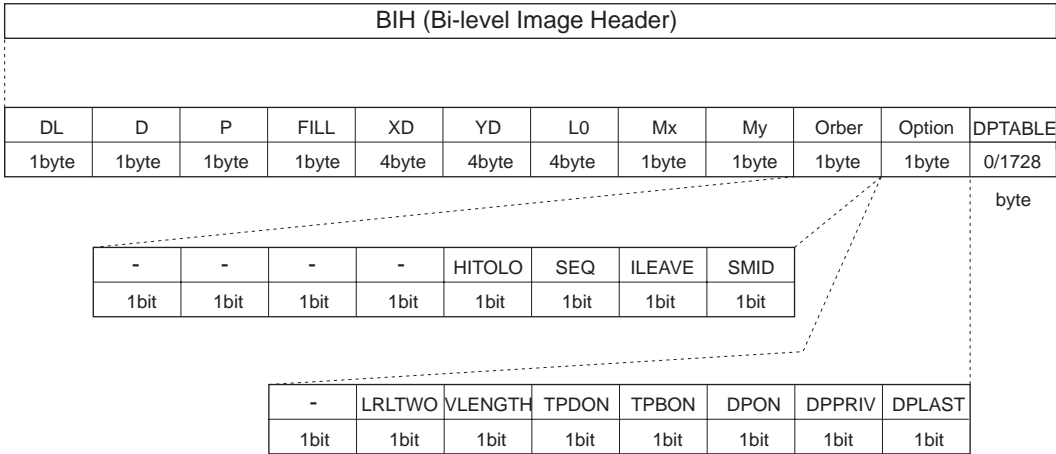
**Figure 2-26 BIH Construction Diagram**

## 7.2.6 Explanation and parameters for each symbol used in BIH

The 0x of each parameter shows that the following integers are hexadecimal.

| Symbol | Meaning | Parameter | Reference |
|--------|---------|-----------|-----------|
| DL | Initial layer to be transmitted | 0x00 fixed | |
| D | Number of differential layers | 0x00 fixed | |
| P | Number of bit planes | 0x00 fixed | |
| FILL | Fill | 0x00 fixed | |
| XD | Horizontal image size at layer D | 0xXXXXXXXX | Document width (No. of bits) |
| YD | Vertical image size at layer D | 0xXXXXXXXX | Document length (No. of bits) |
| L0 | Lines per stripe at the lowest resolution | 0xXXXXXXXX | Basically, 1 stripe is 128 lines (0x00000080). |
| other lines when machine | | | Stripes with numbers of are possible the other can receive in option mode. |
| Mx | Maximum horizontal offset allowed for AT pixel | 0xXX | 0-127 pixels |
| My | Maximum vertical offset allowed for AT pixel | 0x00 fixed | |
| Order | The order in which stripe data is attached | Upper 4 bits 0 fixed | |
| Option | Option | Upper 1 bit 0 fixed | |
| DPTABLE | Private DP table | 0 or 1728 bytes | |
| HITOLO | Transmission order of differential layers | 1 bit 0 fixed | |
| SEQ | Indication of progressive-compatible sequential coding | 1 bit 0 fixed | |
| ILEAVE | Interleaved transmission order of multiple bit plane | 1 bit 0 fixed | |
| SMID | Transmission order of stripes | 1 bit 0 fixed | |
| LRLTWO | Number of reference lines | 1 bit 0/1 | 0: 3 lines 0: 2 lines |
| VLENGTH | Indication of possible use of NEWLEN marker segment | 1 bit 0/1 | Use of 0: NEWLEN not allowed Use of 1: NEWLEN allowed |
| TPDON | Use of TP for Typical Prediction for differential layers | 1 bit 0 fixed | |
| TPBON | Use of TP for base layer | 1 bit 0/1 | 0: OFF 1: ON |
| DPON | Use of Deterministic Prediction | 1 bit 0 fixed | |
| DPPRIV | Use of private DP table | 1 bit 0 fixed | Has meaning when DPON is 1. |
| DPLAST | Use of last DP table | 1 bit 0 fixed | Has meaning when DPON is 1. |

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### 7.2.7 Explanation of bi-level image data (BID) section

BID is as shown in the construction figure below, and consists only of the number of stripes.

BID is constructed by the connection of the floating marker code and the section which includes the actual image data encod ... th JBIG image compression encoding, called SDE (... Data Entity).
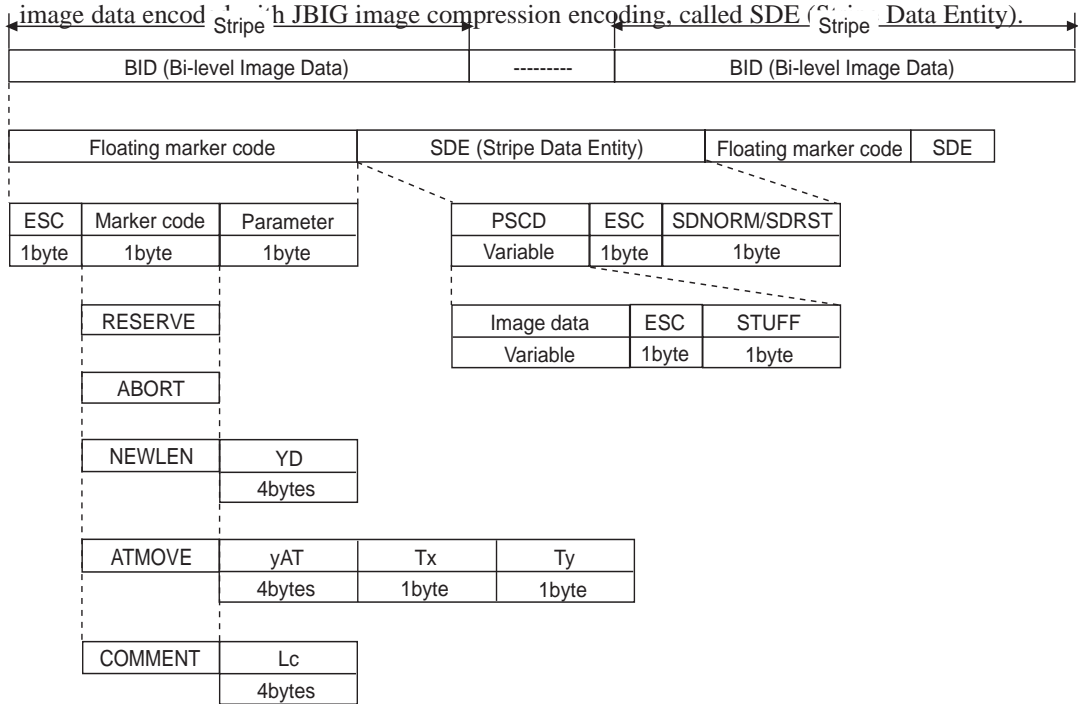


**Figure 2-27 BID Construction Diagram**

### 7.2.8 Explanation and parameters for each symbol used in BID

#### a) Floating marker code section

The floating marker code is set at the head of the stripe data entity (SDE).

In order to distinguish the encoding and the floating marker code, it is imperative that ESC (escape code: 0xFF) be set at the head.

The following marker code and parameters are in the floating marker code.

The 0x of each marker code shows that the following integers are hexadecimal.

ABORT (Abort: 0x05)

Encoding interruption. Only the abort code can be made to appear anywhere.

| ESC | 0x05 |
|---|---|

ATMOVE (AT move: 0x06)

Designates from which line the movement of the AT pixel starts, and where it will move to.

| ESC | 0x06 | yAT:Movement-starting line | Tx:Movement Position(X) | Ty:Movement Position (Y) |
|---|---|---|---|---|

COMMENT (Private comment: 0x07)

An optional comment may be added.

| ESC | 0x07 | Lc:Comment length |
|---|---|---|

NEWLEN (New length: 0x04)

Redefine the document length. Only usable when VLENGTH=ON.

| ESC | 0x04 | YD:Document length |
|---|---|---|

RESERVE (Reserve: 0x01)

Only usable for characteristic use.

| ESC | 0x01 |
|---|---|

## b) Stripe data section

PSCD (Protected stripe encoding data)

The actual image data encoded with JBIG image compression is included in PSCD by the section remaining after the last 2 bytes from SDE, ESC and SDNORM or SDRST are omitted.

Image Data

The actual image data encoded with JBIG image compression.

STUFF

Image data is a variable, so STUFF:0 (zero) is adjusted by continuous sending so that the image data can be arranged into byte units or word (2 byte) units.

SDNORM (Stripe data completion: 0x02)

Shows the completion of stripe data

| ESC | 0x02 |
|---|---|

SDRST (The reset at completion of stripe data: 0x03)

Shows the completion of stripe data. Everything including the study table and the ATMOVE are reset.

| ESC | 0x03 |
|---|---|

**NOTE**

When the image data encoding is 0xFF, it is imperative to attach 0x00 after the image data encoding 0xFF in order to distinguish ESC(0xFF).

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# Chapter 3

# Maintenance and Service

# 1. MAINTENANCE LIST

## 1.1 Consumables

| Level | Consumable | When |
|---|---|---|
| User | Toner cartridge (FX3) | When **"REPLACE CARTRIDGE"** is displayed. |
| Service technician | None | |

## 1.2 Cleaning

| Level | Location | When |
|---|---|---|
| User | Main unit outer covers | When dirty. |
| | Separation roller | When document separation/ feed performance falls. |
| | Separation guide | When document separation performance falls. |
| | White sheet | When copied and transmitted images are faint. |
| | Scanning glass (contact sensor) | When black vertical stripes appear in copied or transmitted images. |
| | Paper feed guide | When marks appears on back of paper in copied or received images. |
| Service technician | Paper pickup roller | When recording paper feed performance falls. |
| | Transfer charging roller | When marks on back of paper or blank spots at intervals of 1.96" (50 mm) appear in copied or received images. |
| | Static charge eliminator | When polka appear dots in copied or received images. |
| | High-voltage terminal | When copied or received images are light, dark, or completely blank. |

| Level | Location | When |
|---|---|---|
| Service technician | Fixing entrance guide | When marks on back of paper, irregular/smudged black vertical line, paper jam,  wrinkles in copied or received images. |
| | Paper face-up eject roller | When paper jams occur during copying or receiving. |
| | Flapper | When paper jams occur frequently during copying or receiving. |
| | Document feed roller | When document feed performance falls. |
| | Document eject roller | When document feed performance falls. |
| | Pressure roller | When marks appear on back of paper at intervals of 2.48" (63 mm),or poor fixing, paper jam, or wrinkles occur during copying or receiving. |
| | Fixing ass'y | When marks appear at intervals of 2.95" (75 mm) or poor fixing of copied or received images occurs. |
| | Separation pad | When recording paper separation performance falls. |

## 1.3 Periodic  Inspection

None

## 1.4 Periodic Replacement Parts

| Level | Location | When |
|---|---|---|
| User | None | |
| Service technician | None | |

## 1.5 Adjustment Items

None

## 1.6 General Tools

| Tool | Use |
|---|---|
| Phillips screwdriver | Removing/inserting screws |
| Flat bladed screwdriver | Removing/inserting screws |
| Precision flat bladed screwdriver | Removing plastic tabs |
| Tweezers | Removing coil spring |
| Pliers, needle nose | Driving retaining ring |
| Lint-free paper | Clean transfer charging roller, fixing film |
| Isopropyl alcohol | Clean fixing entrance guide, fixing eject roller, fixing eject guide, static charge eliminator, etc. |

## 1.7 Special Tools

| Tool | Use | Part No. |
|---|---|---|
| Grease (MOLYKOTE EM-50L) | Apply to specified parts | HY9-0007 |
| Grease (IF-20) | Apply to specified parts | CK-8006 |
| Grease (UNIWAY 68) | Apply to specified parts | CK-0451 |

# 2. HOW TO CLEAN PARTS

## 2.1 Main Unit Outer Covers

Lightly wipe the unit's outer causing with a clean, soft, lint-free cloth moistened with water or diluted dishwashing detergent solution.

## 2.2 Separation Roller

Wipe with a soft, dry clean cloth.

## 2.3 Separation Guide

Wipe with a dry clean soft cloth.

## 2.4 White Sheet

Wipe with a soft, dry clean soft cloth.

## 2.5 Scanning Glass (Contact Sensor)

Wipe with a soft, dry clean cloth.

## 2.6 Paper Feed Guide

Wipe with a clean, soft, dry, lint-free cloth to remove any toner or paper debris.

> Do not touch the transfer changing roller during cleaning.  Otherwise, the print quality may deteriorate.

> If Separation roller, Separation guide and Paper pickup roller are very dirty, wipe with a cloth moistened with Isopropyl alcohol (IPA).  Do not use tissue paper.  Dust from the tissue paper causes static electricity.

### Precautions when using Isopropyl alcohol (IPA)

When cleaning with IPA, take care to prevent the IPA from splashing high-temperature parts.  If IPA splashes high-temperature parts, leave for at least three minutes to allow the IPA to evaporate.
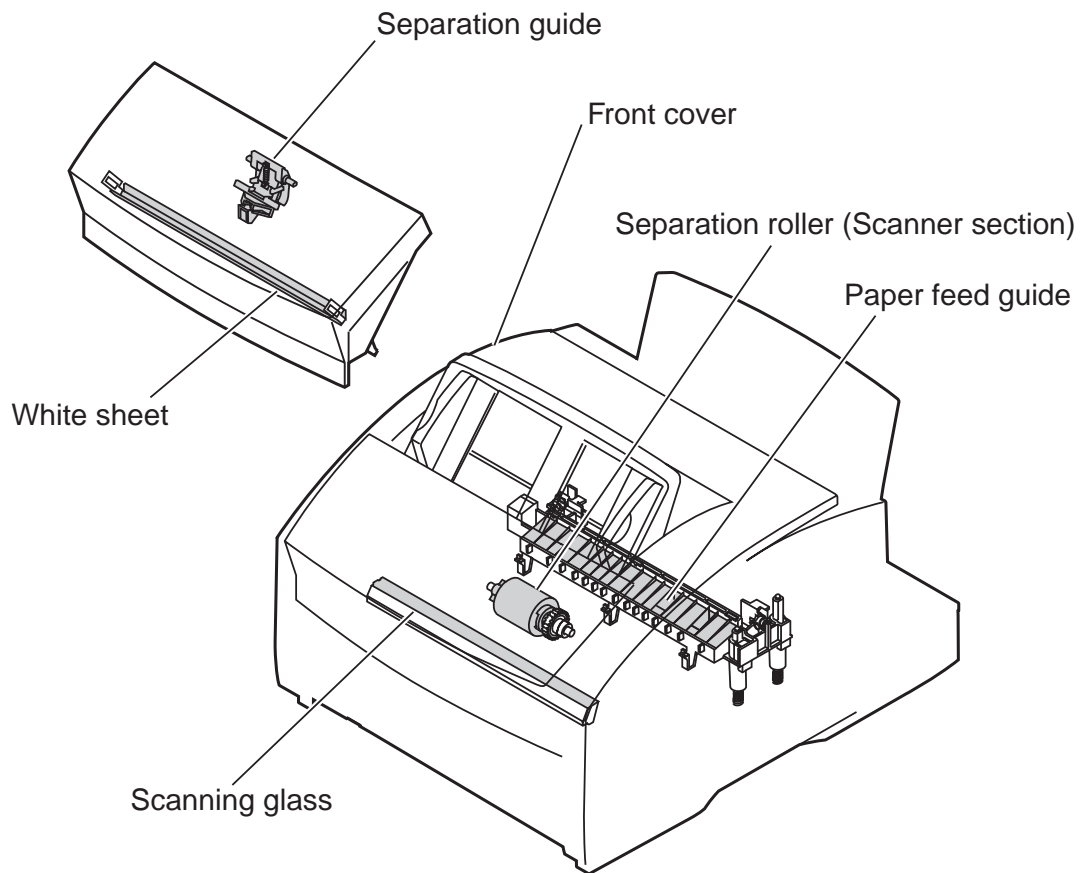
**Figure 3-1 Cleaning Location 1**

## 2.7 Paper Pickup Roller

Using lint-free paper dipped in isopropyl alcohol, wipe and dirt off the paper pickup roller.

## 2.8 Transfer Charging Roller

Wipe with lint-free paper and remove any toner or paper debris.

Do not touch or hold the sponge section of the transfer charging roller.  Doing so can cause marks on back of paper or blank spots in copied or received images.

**Never clean with solvents**

Replace the charging roller if it is deformed or cannot be thoroughly cleared using lint-free paper.

## 2.9 Static Charge Eliminator

Wipe with a lint-free paper and remove any foreign matter, such as paper fragments.

## 2.10 High Voltage Terminal

Wipe with a clean, soft, dry, lint-free cloth to remove any toner or paper debris.

## 2.11 Fixing Entrance Guide

Wipe with a lint-free paper and remove any toner or paper debris.

## 2.12 Paper Face-up Eject Roller

Using lint-free paper dipped in isopropyl alcohol, wipe off the paper eject face-up roller.

## 2.13 Flapper

Wipe with a lint-free paper and remove any toner or paper debris.

## 2.14 Document Feed Roller, Document Eject Roller

Wipe with a soft, dry clean cloth.

## 2.15 Pressure Roller

Using lint-free paper dipped in alcohol, wipe off the pressure roller.

## 2.16 Fixing Ass'y

Using lint-free paper dipped in alcohol, wipe off the fixing ass'y.

## 2.17 Separation Pad

Using cloth dipped in isopropyl alcohol, wipe off the separation pad.
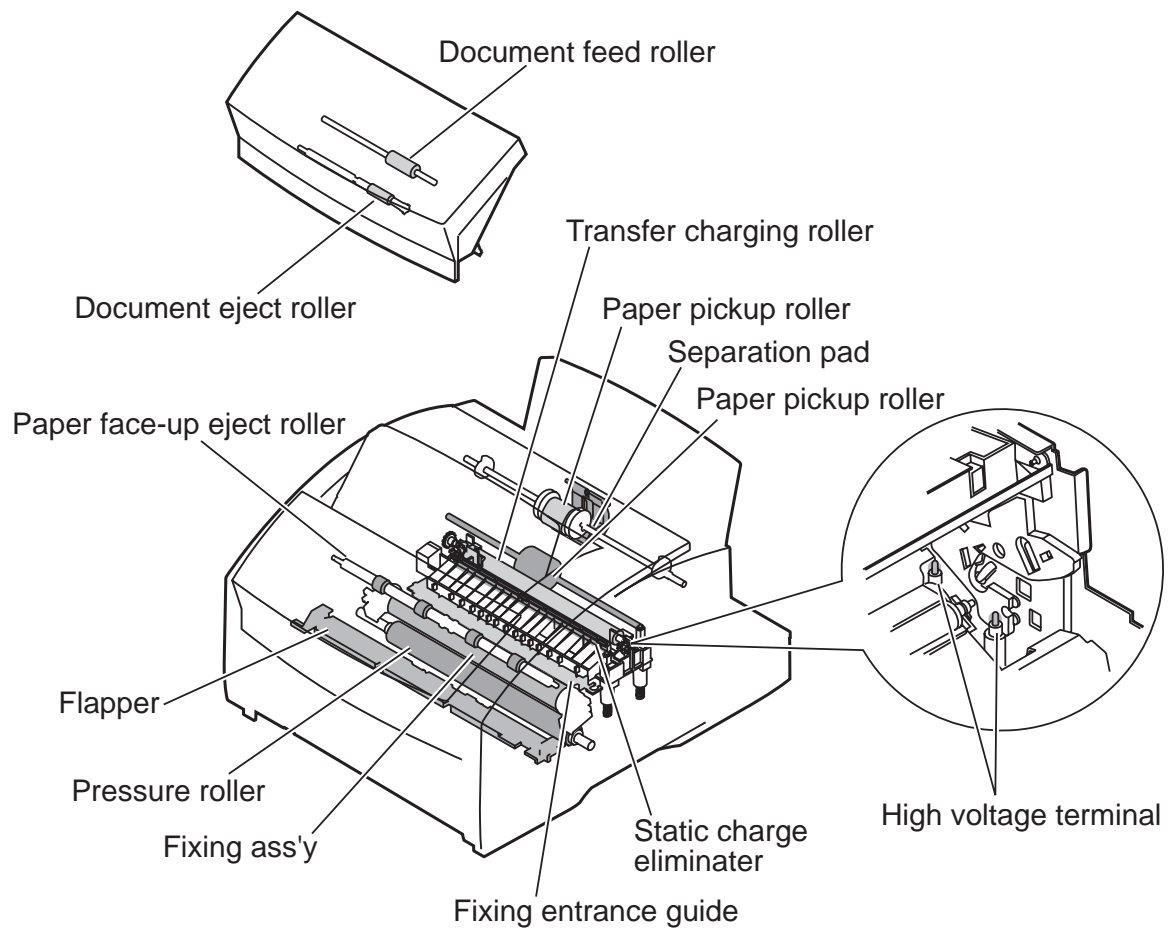
**Figure 3-2 Cleaning Location 2**

# 3. REPLACING PARTS & ADJUSTMENTS

## 3.1 Replacing Parts

For details on the disassembly/assembly procedure when replacing parts, refer to the Parts Catalog (separate). Illustrations in the Parts Catalog are drawn in the order in which parts are disassembled. The Parts Catalog also shows enlarged drawings or supplementary illustrations for parts requiring caution during disassembly and assembly. Particular care should be paid to the cautions contained in illustrations.

## 3.2 Adjustment

None

# 4. TROUBLESHOOTING

## 4.1 Troubleshooting Index

Use the troubleshooting index below to investigate the cause of a problem and refer to the specified page for countermeasures.

## Problem

**• General errors**

| | |
|---|---|
| • The unit does not power on. | **Page 3-18** |
| • The display looks abnormal. | **Page 3-18** |
| • The buttons do not work. | **Page 3-18** |
| • No sound from the speaker | **Page 3-18** |

**• Errors shown on the display**

| | |
|---|---|
| • User error message. | **Page 3-10** |
| • Error codes. | **Page 3-12** |

**• Printing problems (Evaluation criteria: Test printing is faulty.)**

• The paper is not fed correctly. **Page 3-19**

The main motor does not run.

The paper is not picked up from the auto sheet feeder.

The paper skews.

• The printing operation is abnormal. **Page 3-19**

The unit indicates a paper jam when there is none.

• Poor printing quality **Page 3-20**

Light

Dark

Completely blank

All black

Dots

Marks on back of papers

Black vertical lines

Irregular and smudged black vertical lines

Irregular and smudged black horizontal lines

Marks

Blank spots

White vertical lines

White horizontal lines

Faulty registration

Distortion/BD signal failure

Partially compressed/stretched image

Poor fixing

**• Scanning problems (Evaluation criteria: Test printing is good, but the copied image is poor.)**

## 4.2 Errors Shown on the Display

### 4.2.1 User error message

Look for the applicable error message and implement the appropriate countermeasures.

### "BUSY/NO SIGNAL" (#005/#018)

| | |
|---|---|
| **Cause:** | The receiving fax did not answer within 55 seconds. (T0 time over) |
| **Solution:** | Contact the other party and have them check their fax.You can try to send the document manually. For an overseas call, add pauses to the registered number. |
| **Cause:** | The touch tone/rotary pulse setting on your fax is incorrect. |
| **Solution:** | Set your fax to the setting that matches your telephone line. |
| **Cause:** | The other party is not using a G3 machine. |
| **Solution:** | Contact the other party and have them send or receive the document using a G3 machine. |
| **Cause:** | The other party's fax is not working. |
| **Solution:** | Contact the other party and have them check their fax. |
| **Cause:** | The telephone number you dialed is busy. |
| **Solution:** | Try sending the document at a later time. |

### "CHECK DOCUMENT" (#001)

| | |
|---|---|
| **Cause:** | Document jam. This is displayed when the document sensor detects paper, but the document edge sensor cannot detect the leading edge of the document with 15 seconds from the start of the feed operation. |
| **Solution:** | Clear the document jam. |

### "CHECK PAPER SIZE"

| | |
|---|---|
| **Cause:** | The size of the paper loaded in the paper tray is different from the paper size set by the user data menu. |
| **Solution:** | Set the correct paper size in the user data setting. |

### "CHECK PRINTER" (##322~##324, #335)

Check the displayed error code and see the measure to eliminate the error. (*See Page 3-17.*)

### "DATA ERROR"

| | |
|---|---|
| **Cause:** | The registration data in the SRAM was destroyed and a checksum error occurred due to a dead lithium battery or SRAM failure. |
| **Solution:** | (1) Press the *Set* button, and turn the power off and on again. |
| | (2) Replace the lithium battery. |
| | (3) Replace the SCNT board. |

### "DOC. TOO LONG" (#003)

| | |
|---|---|
| **Cause:** | The document is longer than 39.4"(1m). |
| **Solution:** | Use a copy machine to make a reduced copy of the document, then send again. |
| **Cause:** | It took more than 32 minutes to send, copy, a document or receive a document. |
| **Solution:** | Divide the document and send or copy each part separately. Contact the other party and have them divide the document and send each part separately. |

### "HANG UP PHONE"

| | |
|---|---|
| **Cause:** | The handset or the extension telephone is off the hook. |
| **Solution:** | Put the handset or the extension telephone back on the hook. |

### "MEMORY FULL" (#037)

| | |
|---|---|
| **Cause:** | The fax's memory is full because it has received too many documents. |
| **Solution:** | (1) Print out any documents which are stored in memory. Then start the operation again.<br>(2) If the memory contains any facsimiles you don't need, delete them. |
| **Cause:** | The fax's memory is full because you tried to send too many pages at once. |
| **Solution:** | Divide the document and send each part separately. |

### "NO ANSWER" (#005)

| | |
|---|---|
| **Cause:** | The receiving fax machine does not answer. |
| **Solution:** | Make sure you dialed the correct number. Try again later. |

### "NO RX PAPER" (#012)

| | |
|---|---|
| **Cause:** | The receiving fax machine declares no paper in DIS, or its memory is full. |
| **Solution:** | Contact the other party, and ask them to put paper in their machine, or to clear their fax machine's memory. |

### "NO TEL #" (#022)

| | |
|---|---|
| **Cause:** | The button you pressed has no number registered for One-Touch Speed Dialing, Coded Speed Dialing, or Group Dialing. |
| **Solution:** | Print a list of registered numbers and make any corrections needed, then try again. |

### "NOT AVAILABLE NOW"

| | |
|---|---|
| **Cause:** | One-touch or coded speed dial already registered. |
| **Solution:** | Check the contents of the one-touch or coded speed dialing registration, then try again. |

### "CLEAR PAPER JAM" (#009)

| | |
|---|---|
| **Cause:** | Paper jam. |
| **Solution:** | Clear the paper jam. |

### "REPLACE CARTRIDGE"

| | |
|---|---|
| **Cause:** | The toner cartridge has run out of toner. |
| **Solution:** | Replace the toner cartridge. |

**"START AGAIN"**

| | |
|---|---|
| **Cause:** | An error occurred on the phone line or in the system. |
| **Solution:** | Start the procedure again from the beginning. |

**"LOAD PAPER"**

| | |
|---|---|
| **Cause:** | The fax is out of paper. |
| **Solution:** | Add more paper to the paper tray. |

**"CHECK COVER/CART"**

| | |
|---|---|
| **Cause:** | The toner cartridge is not installed properly. |
| **Solution:** | Make sure the toner cartridge is installed properly. |
| **Cause:** | Front cover is not closed. |
| **Solution:** | Close front cover. |

## 4.2.2 Error codes

### a) Service error code output

When service data **#1 SSSW SW01** bit 0 is set to **"1"**, then service error codes are printed on the activity management reports, reception result reports and error transmission reports when communication is terminated due to an error.  Also, the following is displayed when an error occurs.

TX/RX No. 5001

Display alternates repeatedly

START AGAIN ##106
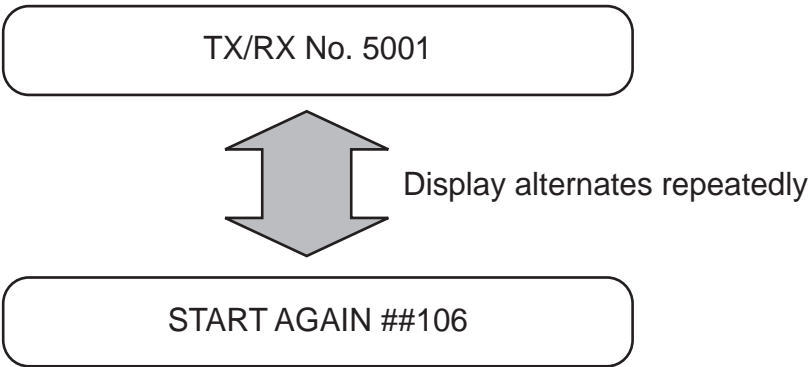
**Figure 3-3 Service Error Code Display**

**b) Error code countermeasures**

The following item c) lists all the error codes which the unit can display. The separate *G3 Facsimile Error Code List (Rev. 1)* does not specify the countermeasures for resolvable error codes.  Also refer to this list when an error code appears.

The *G3 Facsimile Error Code List (Rev. 1)* does not specify countermeasures for all error codes.  The countermeasures that are specified in the *G3 Facsimile Error Code List (Rev. 1)* are included here as specific countermeasures for your reference.

**• Increase the transmission level**

Increase service data **#2 MENU** Parameter No.07 toward 0 (dBm).

**• Decrease the transmission level**

Decrease service data **#2 MENU** Parameter No.07 toward -15 (dBm).

**• Echo measures**

Change the following bit switches of service data **#1 SSSW SW03**.

Bit 4:1     Ignore the first DIS signal sent by the other fax machine.

       0     Do not ignore the first DIS signal sent by the other fax machine.

Bit 5:1     Transmit a tonal signal (1850 or 1650 Hz) when the other fax machine sends a DIS signal.

       0     Do not transmit a tonal signal when the other fax machine sends a DIS signal.

Bit 6:1     Transmit a 1650-Hz tonal signal when bit 5 is 1.

       0     Transmit a 1850-Hz tonal signal when bit 5 is 1.

Bit 7:1     Transmit a tonal signal before sending a CED signal.

       0     Do not transmit a tonal signal before sending a CED signal.

**• EPT (Echo Protect Tone)**

Change service data **#1 SSSW SW03** bit 1.

Bit 1:1     Transmit an echo protect tone.

       0     Do not transmit an echo protect tone.

**• Adjust NL equalizer.**

Set service data **#2 MENU** Parameter No.05 to **"ON"**.

**• Reduce the transmission start speed.**

Reduce the transmission speed by changing **"TX START SPEED"** setting.

**• Loosen the TCF judgment standard.**

Not available for this fax.

**• Loosen the RTN transmission conditions.**

Change service data **#3 NUMERIC Param**. Parameters No.02 to 04.

No.02 Percentage of errors in all lines                    : Set close to 99%.

No.03 Number of lines of burst condition                : Set close to 99 lines.

No.04 Number of burst line groups                          : Set close to 99 groups.

**• Increase the no-sound time after CFR reception.**

Change service data #1 SSSW SW04 bit 4 to "1".

Bit 4: 1     Time when the low-speed signal is ignored after sending a CFR signal: 1500 ms

        0     Time when the low-speed signal is ignored after sending a CFR signal: 700 ms

### c) ERROR CODE LIST for FAX-L350

The error codes used for this fax are as follows.

Codes listed as "New" in the list below indicate new error codes, or codes whose measures differ from those listed in the separate document *G3 Facsimile Error Code List (Rev.1)*.

For recovery methods for error codes indicated as "New", see the item *d) Recovery methods for codes indicated as "New"* in *this chapter, 5.2.2 Error codes.*

For items other than "New", see the separate document *G3 Facsimile Error Code List (Rev.1)*.

**• User error code**

| No. | Tx or Rx | Definition |
|---|---|---|
| #001 | [ TX      ] | Paper Jam |
| #003 | [ TX/RX ] | Copy Page, Communication Time Over |
| #005 | [ TX/RX ] | Initial ID (T1) Time Over |
| #009 | [ RX      ] | Recording Paper Jam or Out of Paper |
| #011 | [ RX      ] | Polling Error |
| #012 | [ TX      ] | Other party Out of Paper |
| #018 | [ TX/RX ] | Automatic Dialing Error |
| #021 | [ RX      ] | DCN during Polling Rx |
| #022 | [ TX      ] | Call Failure |
| #037 | [ RX      ] | Image Memory Full |
| #039 | [ TX      ] | Closed Network Tx Failure |
| #995 | [ TX/RX ] | Memory Communication reservation cancellation |

**• Service error code**

| No. | Tx or Rx | Definition |
|---|---|---|
| ##100 | [ TX      ] | Excessive Repeat Protocol during Rx |
| ##101 | [ TX/RX ] | Modem Speed Different from Other Party |
| ##102 | [ TX      ] | Fall Back Failure during Tx |
| ##103 | [ RX      ] | Fail to Detect EOL for 5 Seconds (15 seconds for CBT) during Rx |
| ##104 | [ TX      ] | RTN or PIN Received during Tx |
| ##106 | [ RX      ] | Fail to Receive Protocol for 6 Seconds when Waiting for Protocol during Rx |
| ##107 | [ RX      ] | Fall Back Failure on Tx Side during Rx |
| ##109 | [ TX      ] | Receive Signals Other than DIS, DTC, FTT, CFR or CRP after DCS Tx and Exceed the Number of Protocol re-transmissions during Tx |
| ##111 | [ TX/RX ] | Memory error |
| ##114 | [ RX      ] | RTN Transmission during Reception |
| ##116 | [ TX/RX ] | Detect Loop Current Disconnection during Communication |
| ##200 | [ RX      ] | Fail to Detect Picture Rx Carrier for 5 Seconds during Rx |
| ##201 | [ TX/RX ] | DCN received Other than Normal Binary Protocol |
| ##204 | [ TX      ] | Receive DTC without Tx Data |
| ##220 | [ TX/RX ] | System Error (main program runaway) |
| ##224 | [ TX/RX ] | Abnormal Protocol during G3 Communication |
| ##226 | [ TX/RX ] | Stack Pointer Not within RAM Range |
| ##229 | [ RX      ] | Recording Unit Locked for 1 Minute |
| ##232 | [ TX      ] | ENCODE Control Unit Malfunction |
| ##237 | [ RX      ] | DECODE Control Unit Malfunction |
| ##238 | [ RX      ] | PRINT Control Unit Malfunction |
| ##261 | [ TX/RX ] | System Error between Modem and SCNT |
| ##280 | [ TX      ] | Excessive Repeat Protocol Command during Tx |
| ##281 | [ TX      ] | Excessive Repeat Protocol Command during Tx |
| ##282 | [ TX      ] | Excessive Repeat Protocol during Tx |
| ##283 | [ TX      ] | Excessive Repeat Protocol during Tx |

**3-14**

| No. | Tx or Rx | Definition |
|---|---|---|
| ##284 | [ TX ] | DCN Reception after TCF Transmission |
| ##285 | [ TX ] | DCN Reception after EOP Transmission |
| ##286 | [ TX ] | DCN Reception after EOM Transmission |
| ##287 | [ TX ] | DCN Reception after MPS Transmission |
| ##288 | [ TX ] | Receive Signals Other than PIN, PIP, MCF, RTP or RTN after EOP Transmission |
| ##289 | [ TX ] | Receive Signals Other than PIN, PIP, MCF, RTP or RTN after EOM Transmission |
| ##290 | [ TX ] | Receive Signals Other than PIN, PIP, MCF, RTP or RTN after MPS Transmission |
| ##322 | [ RX ] | Printer (LBP) Fixing Unit Trouble |
| ##323 | [ RX ] | Printer (LBP) BD (Beam Detect) Trouble |
| ##324 | [ RX ] | Printer (LBP) Scanner Trouble |
| ##670 | [ TX ] | At V.8 late start, the called party declares the V.8 protocol in DIS signal and this unit transmits a CI signal, but the protocol does not progress and a T1 time-out occurs. |
| ##671 | [ RX ] | At V.8 termination, the protocol did not advance to phase 2 and a T1 time-out occurs after the caller CM signal was detected. |
| ##672 | [ TX ] | The protocol did not move from phase 2 to phase 3 and a T1 time-out occurred during V.34 transmission. |
| ##673 | [ RX ] | The protocol did not move from phase 2 to phase 3 and a T1 time-out occurred during V.34 reception. |
| ##674 | [ TX ] | The protocol did not move from phase 3 to phase 4 and a T1 time-out occurred during V.34 transmission. |
| ##675 | [ RX ] | The protocol did not move from phase 3 to phase 4 and a T1 time-out occurred during V.34 reception. |
| ##750 | [ TX ] | Exceed Repeat Protocol Due to Failure to Receive Significant Signals after Transmitting PPS-NULL during ECM Tx |
| ##752 | [ TX ] | Receive DCN after PPS-NULL Transmission during ECM Tx |
| ##753 | [ TX ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after PPS-NULL Transmission during ECM Tx |
| ##754 | [ TX ] | Exceed Retransmit Protocol after PPS-NULL Transmission during ECM Tx |
| ##755 | [ TX ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after PPS-MPS Transmission during ECM Tx |
| ##757 | [ TX ] | Receive DCN after PPS-MPS Transmission during ECM Tx |
| ##758 | [ TX ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after PPS-MPS Transmission during ECM Tx |
| ##759 | [ TX ] | Exceed Retransmit Protocol after PPS-MPS Transmission during ECM Tx |
| ##760 | [ TX ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after PPS-EOM Transmission during ECM Tx |
| ##762 | [ TX ] | Receive DCN after PPS-EOM Transmission during ECM Tx |
| ##763 | [ TX ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after PPS-MPS Transmission during ECM Tx |
| ##764 | [ TX ] | Exceed Retransmit Protocol after PPS-EOP Transmission during ECM Tx |
| ##765 | [ TX ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after PPS-EOP Transmission during ECM Tx |
| ##767 | [ TX ] | Receive DCN after PPS-EOP Transmission during ECM Tx |

| No. | Tx or Rx | Definition |
|---|---|---|
| ##768 | [ TX      ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after PPS-EOP Transmission during ECM Tx |
| ##769 | [ TX      ] | Exceed Retransmit Protocol after PPS-EOP Transmission during ECM Tx |
| ##770 | [ TX      ] | Exceed Repeat Protocol Limit Due to Failure to Receive Significant Signals after Transmitting EOR-NULL during ECM Tx |
| ##772 | [ TX      ] | Receive DCN after EOR-NULL Transmission during ECM Tx |
| ##773 | [ TX      ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after EOR-NULL Transmission during ECM Tx |
| ##774 | [ TX      ] | Receive ERR after EOR-NULL Transmission during ECM Tx |
| ##775 | [ TX      ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after EOR-MPS Transmission during ECM Tx |
| ##777 | [ TX      ] | Receive DCN after EOR-MPS Transmission during ECM Tx |
| ##778 | [ TX      ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after EOR-MPS Transmission during ECM Tx |
| ##779 | [ TX      ] | Receive ERR after EOR-MPS Transmission during ECM Tx |
| ##780 | [ TX      ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after EOR-EOM Transmission during ECM Tx |
| ##782 | [ TX      ] | Receive DCN after EOR-EOM Transmission during ECM Tx |
| ##783 | [ TX      ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after EOR-EOM Transmission during ECM Tx |
| ##784 | [ TX      ] | Receive ERR after EOR-EOM Transmission during ECM Tx |
| ##785 | [ TX      ] | Exceed Protocol Retransmission Limit Due to Failure to Receive Significant Signals after EOR-EOP Transmission during ECM Tx |
| ##787 | [ TX      ] | Receive DCN after EOR-EOP Transmission during ECM Tx |
| ##788 | [ TX      ] | Exceed Protocol Retransmission Limit or T5 Time (60 seconds) after EOR-EOP Transmission during ECM Tx |
| ##789 | [ TX      ] | Receive ERR after EOR-EOP Transmission during ECM Tx |
| ##790 | [ RX      ] | Transmit ERR after EOR-Q Reception during ECM Rx |
| ##791 | [ TX/RX ] | Receive Non-Significant Signals during ECM Mode Procedures |
| ##792 | [ RX      ] | Fail to Detect PPS-NULL between Partial Pages during ECM Rx |
| ##793 | [ RX      ] | Time Over Due to Failure to Receive Valid Frame during High Speed Signal Rx upon ECM Rx |
| ##794 | [ TX      ] | Receive All 0 PPR during ECM Tx |
| ##795 | [ TX/RX ] | Trouble in the decoding processing during communication |

**3-16**

**d) New error codes and recovery methods**

There is no new error code in this model.

Note, however, the following supplementary information, as the machine requires different actions than the existing models to correct:

### ##322 [TX/RX] Fixing heater temperature abnormality

| | |
|---|---|
| **Cause:** | Internal unit defect. |
| **Solutions:** | (1) Check the connections between the fixing ass'y and the PCNT board (J2) and between the fixing ass'y and the power supply unit (J102). |
| | (2) Check the connection between the PCNT board (J403) and the power supply unit (J202). |
| | (3) Check the resistance between connector pins of the fixing ass'y. |

        J203-12 and J203-13: 790 to 212 ký (at 10 ~ 35°C)

        J102-1 and J102-2: 120.9 to 139.1 ý (at 25°C)

        If either resistance is incorrect, replace the fixing ass'y.

      (4) Check the voltage at J102 of the power supply unit (with the heater cable TB1 removed); if it is not the same as the AC input voltage, replace the power supply unit.

      (5) Replace the PCNT board.

      (6) Replace the SCNT board.

### ##323 [TX/RX] LASER/scanner section BD signal output abnormal

| | |
|---|---|
| **Cause:** | Internal unit defect  (Low LASER intensity) |
| **Solutions:** | (1) Check the connection between the LASER/scanner section (J801) and the SCNT board (J502). |
| | (2) Replace the LASER/scanner section. |
| | (3) Replace the SCNT board. |
| **Cause:** | Internal unit defect (BD signal timing error) |
| **Solutions:** | (1) Check the connection between the LASER/scanner section (J801) and the SCNT board (J502). |
| | (2) Replace the LASER/scanner section. |
| | (3) Replace the SCNT board. |

### ##324 [TX/RX] Printer section scanner motor rotation rate abnormal

| | |
|---|---|
| **Cause:** | Internal unit defect (Incorrect scanner motor speed) |
| **Solutions:** | (1) Check the connection between the LASER/scanner section (J1) and the SCNT board (J502). |
| | (2) Replace the LASER/scanner section. |
| | (3) Replace the SCNT board. |

### ##335 [TX/RX] Data communication error between system control section and printer control section

| | |
|---|---|
| **Cause:** | Internal unit defect |
| **Solutions:** | (1) Check the connections between the PCNT board (J1) and the SCNT board (J3) and between the SCNT board (J2) and power supply unit (J201). |
| | (2) Replace the SCNT board. |
| | (3) Replace the PCNT board. |
| | (4) Replace the power supply unit. |

### 4.3 Errors not Shown on the Display
#### 4.3.1 General errors

• **The unit does not power on. (Evaluation criteria: Look at the actual unit.)**

   (1) Check the power cord connection.

   (2) Check the connection between the SCNT board (J2) and power supply unit (J201).

   (3) Check the power supply unit's fuse (FU101).

   (4) Replace the power supply unit.

• **Abnormal display.  (Applicable test mode: Operation panel test)**
   **Nothing is displayed.**

   (1) Check the connection between the operation panel unit and SCNT board (J406).

   (2) Replace the operation panel unit.

   (3) Replace the SCNT board.

   **Part of the LCD panel does not display anything.**

   (1) Check for LCD problems with the test mode.

   (2) Check the connection between the operation panel unit and SCNT board (J406).

   (3) Replace the operation panel unit.  (Faulty LCD)

   (4) Replace the SCNT board.

• **The buttons do not work.  (Applicable test mode: Operation panel test)**

   (1) If the test mode can be used, check for faulty buttons.

   (2) Check the connection between the operation panel unit and SCNT board (J406).

   (3) Replace the operation panel unit.

   (4) Replace the SCNT board.

• **No sound from the speaker**

   (1) Check the connection of the speaker and SCNT board (J7).

   (2) Replace the speaker.

   (3) Replace the SCNT board.

## 4.3.2 Printing problems
- **Faulty printing (Evaluation criteria: Test print is faulty.)**
  - **The paper is not fed correctly. (Evaluation criteria: Look at the actual unit.)**
    ### The main motor does not run.
    (1) Check the voltage (+12 V) at both terminals of C501 located on the MCNT board.

    (2) Check the main motor's resistance. 1.62 ~ 1.98 Ω/1 phase is normal. (*Fig. 3-4*)

    (3) Replace the main motor.

    (4) Replace the SCNT board.

    (5) Replace the MCNT board.

Main motor

Main motor connector

1-2 : 1.62~1.98 Ω
3-4 : 1.62~1.98 Ω

4

1
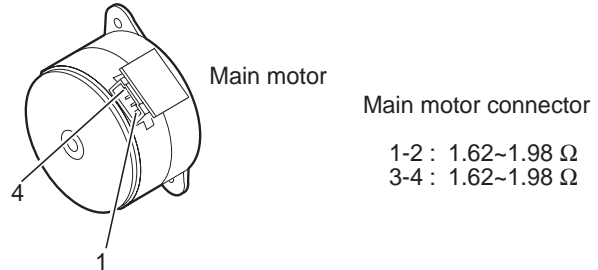
**Figure 3-4 Main Motor Connector**

### The paper is not picked up from the auto sheet feeder/cassette.
(1) Check whether the recommended paper is used.

(2) Check whether more than 100 sheets (0.39" (10 mm)) or less of paper have been loaded in the auto sheet feeder, be sure that the curling, if any, appreciable.

(3) Check whether more than 250 sheets (1.08" (27.5 mm)) or less of paper have been loaded in the cassette.

(4) Check whether the paper has been loaded into the sheet feeder correctly.

(5) Check the connection between the paper pickup solenoid and the MCNT board (J501/J508).

(6) Replace the paper pickup solenoid.

(7) Clean the separation pad.

(8) Replace the separation pad.

(9) Replace the separation pad spring or the lifting spring.

(10)Replace the SCNT board.

### The paper skews.
(1) Check whether the recommended paper is used.

(2) Check whether more than 100 sheets (0.39" (10 mm)) or less of paper have been loaded in the auto sheet feeder, be sure that the curling, if any, appreciable.

(3) Check whether more than 250 sheets (1.08" (27.5 mm)) or less of paper have been loaded in the cassette.

(4) Check whether the paper has been loaded into the sheet feeder correctly.

(5) Check whether dust or paper debris have built up inside the auto sheet feeder.

(6) Check whether the paper pickup roller, or any other rollers, are damaged or scratched.

- **The printing operation is abnormal.**
  ### The unit indicates there is a paper jam when there is no paper jam.
  (1) Check the connection from the paper edge sensor to the SCNT board (J507).

  (2) Check whether the paper edge sensor and actuator and the paper eject sensor actuator are in their correct positions.

  (3) In test mode check whether the paper edge sensor and the paper eject sensor are operating correctly.

  (4) Check the connection between the main motor and the SCNT board (J507).

  (5) Replace the main motor.

  (6) Replace the SCNT board.

**• Poor printing quality (Evaluation criteria: Check the test print image's faults.)**

Before checking for the cause of print defects, check whether the user uses Canon-recommended paper and stores it correctly.  If the problem is solved by using the recommended paper, the customer should be advised to use the recommended paper and store it correctly.

Light

Dark

Completely blank

All black
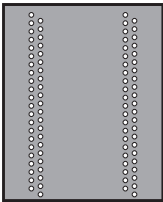
Dots

Marks on
back of paper

Black vertical
lines

Irregular and smudged
black vertical lines

Irregular and
smudged black
horizontal lines

Marks

Blank spots

White vertical
lines

White horizontal lines
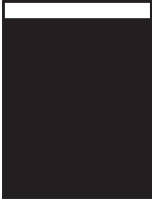
Faulty
registratio

Poor fixing

Distortion
nBD failure
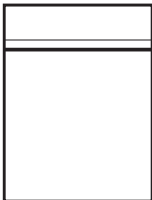
Partially compressed/stretched image

**Figure 3-5 Faulty Print Samples**

**• Light**

| | | |
|---|---|---|
| **Solutions:** | (1) | Remove the toner cartridge and shake it lightly five or six times. |
| | (2) | Verify that user setting **"ECONOMY PRT"** is not **"ON"**. |
| | (3) | Replace the toner cartridge. |
| | (4) | Open the front cover during printing, and remove the toner cartridge.  Open the cartridge drum cover shutter manually, and check whether the toner image on the photosensitive drum is transferred onto the paper.  If it is transferred, go to item (7).  If not, go the following step. |
| | (5) | Clean the transfer bias contact and the transfer charging roller shaft contact. |
| | (6) | Replace the transfer charging roller. |
| | (7) | Clean the developing bias contact and the toner cartridge contact. |
| | (8) | Replace the PCNT board. |
| | (9) | Replace the LASER/scanner section. |
| | (10) | Replace the SCNT board. |

**• Dark**

| | | |
|---|---|---|
| **Solutions:** | (1) | Verify that user setting **"ECONOMY PRT"** is not **"OFF"**. |
| | (2) | Clean the drum ground contact and the toner cartridge contact |
| | (3) | Clean the primary charging contact and the toner cartridge contact. |
| | (4) | Replace the LASER/scanner section. |
| | (5) | Replace the SCNT board. |

**• Completely blank**

| | | |
|---|---|---|
| **Solutions:** | (1) | Clean the developing bias contact and the toner cartridge contact. |
| | (2) | Check whether the projection for opening and closing the LASER shutter on the toner cartridge is damaged. |
| | (3) | Check the voltage connector (MCNT : J503/J5, SCNT : J501/J3) for the high-voltage power circuit. |
| | (4) | Replace the PCNT board. |
| | (5) | Replace the LASER/scanner section. |
| | (6) | Replace the SCNT board. |

**• All black**

| | | |
|---|---|---|
| **Solutions:** | (1) | Replace the toner cartridge. |
| | (2) | Clean the primary charging contact and the toner cartridge contact. |
| | (3) | Replace the PCNT board. |
| | (4) | Replace the LASER/scanner section. |
| | (5) | Replace the SCNT board. |

**• Dots**

| | | |
|---|---|---|
| **Solutions:** | (1) | Clean the static charge eliminator in the toner transfer section. |
| | (2) | Check the static charge eliminator contact. |
| | (3) | Clean the transfer charging roller. |
| | (4) | Replace the transfer charging roller. |

**• Marks on back of paper**

**Solutions:**
(1) Copy a few white paper documents.
(2) If the marks are at intervals of approx. 50mm (1.96"), clean the transfer charging roller, but if they are at intervals of approx. 63mm (2.48"), clean the pressure roller.
(3) Clean the paper feed guide and fixing entrance guide.
(4) Replace the transfer charging roller.
(5) Replace the pressure roller.

**• Black vertical lines**

**Solutions:**
(1) Open the front cover during printing, and remove the toner cartridge. Open the cartridge drum cover shutter manually, and check whether there are black vertical lines on the photosensitive drum. If there are black lines, replace the toner cartridge. If not, go the following step.
(2) Clean the face-down eject roller.
(3) Clean the fixing entrance guide.
(4) Replace the fixing ass'y.

**• Irregular and smudged black vertical lines**

**Solutions:**
(1) Clean the fixing entrance guide.
(2) Replace the toner cartridge.

**• Irregular and smudged black horizontal lines**

**Solutions:**
If the irregular smudged black lines occur cyclically, replace the toner cartridge. If they are non-cyclical, replace the fixing ass'y.

**• Marks**

**Solutions:**
(1) If the marks are at intervals of approx. 50mm (1.96"), clean the transfer charging roller; if they are at intervals of approx. 75mm (2.95"), clean the fixing ass'y; and if they are at intervals of approx. 75mm (2.95"),or 38mm (1.5"), replace the toner cartridge.
(2) Clean the paper feed guide.
(3) Clean the fixing entrance guide.

**• Blank spots**

**Solutions:**
(1) Clean the transfer charging roller.
(2) Replace the transfer charging roller.
(3) Replace the toner cartridge.
(4) Check for foreign matter button the transfer charging roller gear and the drive gear.
(5) Clean the developing bias contact and the toner cartridge contact.
(6) Replace the PCNT board.
(7) Replace the SCNT board.

**• White vertical lines**

**Solutions:**
    (1)  Remove the toner cartridge and shake it lightly five or six times.
    (2)  Open the toner cartridge drum shutter and if there are vertical white lines on the photosensitive drum, replace the toner cartridge.
    (3)  Check for foreign matter stuck in the LASER output hole on the LASER/scanner section or the LASER input hole on the toner cartridge.
    (4)  Clean the face-up eject roller.
    (5)  Clean the fixing entrance guide.
    (6)  Replace the fixing ass'y.
    (7)  Replace the LASER/scanner section.

**• White horizontal lines**

**Solutions:**
    (1)  Replace the toner cartridge.
    (2)  Replace the fixing ass'y.

**• Faulty registration**

**Solutions:**
    (1)  Check if more than the regulation amount of paper is loaded in the sheet feeder.
    (2)  Clean the paper pickup roller.
    (3)  Replace the paper pickup roller.
    (4)  Check whether the paper edge sensor actuator is damaged or deformed.
    (5)  Replace the pickup solenoid.
    (6)  Replace the paper edge sensor.
    (7)  Replace the SCNT board.

**• Distortion/BD signal failure**

**Solutions:**
    (1)  Check the connection between the LASER/scanner section and SCNT board (J502) connector connections.
    (2)  Replace the LASER/scanner section.
    (3)  Replace the SCNT board.

**• Partially compressed/stretched image**

**Solutions:**
    (1)  Check for foreign matter between the toner cartridge gear and the drive gear.
    (2)  Check if the toner cartridge gear is broken.
    (3)  Replace the toner cartridge.

**• Poor fixing**

**Solutions:**
    (1)  If the marks are at intervals of approx. 75mm (2.95"), clean the fixing ass'y;if they are at intervals of approx. 63mm (2.48"), clean the pressure roller.
    (2)  Replace the fixing ass'y.
    (3)  Replace the pressure roller.
    (4)  See the next page, and check the nip width of the fixing section.  If it is not as specified, replace the fixing pressure plate.

**NOTE**
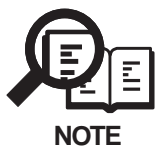
**Checking the fixing nip width**

Improperly set fixing nip may cause a fixing ass'y problem. The fixing ass'y is not designed to allow adjustment of the nip.

Check the fixing ass'y nip by using the following procedure.

(1) Either take along one or two all-black copies of A4 or letter size made with a copier, or make one using a copier at the customer site.

(2) Set the black copy in the sheet feeder with the black side facing up.

(3) Change the paper delivery selector to the face-up delivery slot.

(4) Enter the test mode and run **[3] PRINT, [6] ENDURANCE**.

(5) Turn the power off when the beginning of the paper appears in the face-up delivery slot. Turn the power off, wait for 10 seconds, and remove the paper from the face-up delivery slot slowly.

(6) Measure the widths of the areas on the paper where toner luster is visible and check whether they fall within the range shown in below table.
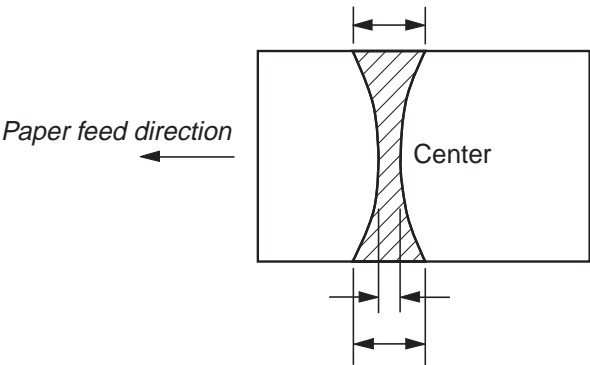


| | Dimension |
|---|---|
| b | 3.0 to 5.0 mm (0.12" to 0.20") |
| \|a - c\| | 0.5 mm (0.02") or less |
| \|a - b\| | 1.0 mm (0.04") or less |
| \|b - c\| | 1.0 mm (0.04") or less |

**Figure 3-6 Fixing Nip Width**

## 4.3.3 Scanning problems

**• Faulty scanning (Evaluation criteria: Test print is good, but the copied image is poor.)**

**• The document is not fed.**

**The document feed motor does not run. (Evaluation criteria: Check it visually.)**

(1) Check the voltage (+12 V) at both terminals of C501 located on the MCNT board.

(2) Check the connection between the document feed motor and the SCNT board (J406).

(3) Check the document feed motor's resistance.  5.6 ~ 6.8 Ω/1 phase is normal. (*Fig. 3- V)7*)

(4) Replace the document feed motor.

(5) Replace the SCNT board.

**The document slips against the rollers. (Evaluation criteria: Check it visually.  Stretched copy image.)**

(1) See *page 3-4* and clean the document reading section.

(2) Replace the reading section's rollers.

**The document does not separate. (Evaluation criteria: Check it visually.)**

(1) Check whether the document feed motor is driving all the rollers. (Check for any damaged gears or foreign matter stuck inside.)

(2) Check whether the document feed lever is set to manual document feed.

(3) See *page 3-4* and clean the separation roller and separation guide.

(4) Replace the separation roller and separation guide.

**The scanner unit's sensors are defective (Evaluation criteria: The placed document or transported document is not detected.)**

(1) Check for any faulty sensors while executing the copying operation and test mode.

(2) Check the connection between the operation panel unit and the SCNT board (J406).

(3) Replace operation panel unit.

(4) Replace the SCNT board.



To document feed motor
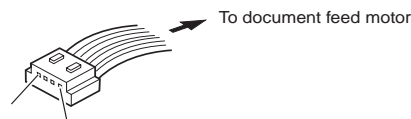
Document feed motor connector

1-2 :  5.6~6.8 Ω
3-4 :  5.6~6.8 Ω

**Figure 3-7 Document Feed Motor Connector**

**• The reading image is abnormal. (Evaluation criteria: Check the copy image's faults.)**

**Nothing is printed.**

(1) Check the connection between the contact sensor and SCNT board (J1).

(2) Replace the contact sensor unit.

(3) Replace the SCNT board.

**The image has vertical stripes.**

(1) Clean the contact sensor's scanning glass.

(2) Check the connection between the contact sensor and SCNT board (J1).

(3) Replace the contact sensor unit.

**The image has thick vertical stripes.**

(1) Clean the contact sensor's scanning glass.

(2) Check the connection between the contact sensor and SCNT board (J1).

(3) Replace the contact sensor unit.

# 5. SERVICE SWITCHES

## 5.1 Hardware Switches

There is a slide switch on the NCU board that must be set for each country.



| Nation | SW No. 1 | 2 | 3 |
|---|---|---|---|
| U.K., FRN, AE, AUS, CHINA, N.Z. | B | A | B |
| SWEDEN | A | B | A |
| OTHERS (in CENV territory) | A | A | A |
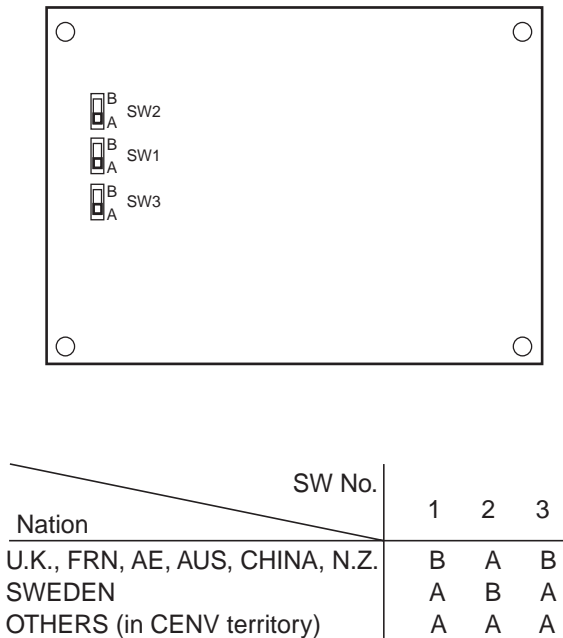
**Figure 3-8 Slide Switch Location on NCU and Switch Settings**

## 5.2 Service Data Settings

Service data can be checked and changed with items on display menus.  The default values of the SSSW/parameters available in this fax machine are shown in *this Chapter, 5.2.3 Service data settings* in this manual.  The SSSW/parameters given in the previous product-specific manual are explained in the *G3 Facsimile Service Data Handbook*.  The new switches for this model are described in *this Chapter, 5.2.3 Service data settings*.

### 5.2.1 Service data overview

The service data menu items are divided into the following ten blocks.

#### #1 SSSW (Service Soft Switch settings)

These setting items are for basic fax service functions such as error management, echo countermeasures, and communication trouble countermeasures.

#### #2 MENU (MENU switch settings)

These setting items are for functions required during installation, such as NL equalizer and transmission levels.

#### #3 NUMERIC Param. (NUMERIC parameter settings)

These setting items are for inputting numeric parameters such as the various conditions for the FAX/TEL switching function.

#### #4 NCU (NCU settings)

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

#### #5 TYPE (TYPE setting)

The type setting makes the service data conform to a specific nation's communications standards.

#### #6 GENESIS (UHQ function setting)

These setting items are for scanned image processing functions such as edge enhancement and error diffusion processing.

#### #7 PRINTER (PRINTER function settings)

These setting items are for basic printer service functions such as the reception picture reduction conditions.  Also there is an item for resetting the printer section without switching the power off-on.

#### #8 CLEAR (data initialization mode)

Various data are initialized by selecting one of these setting items.  There is a setting item for checking/inputting the total number of pages printed and total number of pages scanned by this fax.

#### #9 ROM (ROM management)

ROM data such as the version number and checksum are displayed.

### 5.2.2 Service data registration/setting method

Service data can be registered and set by the following operations:

```
┌─────────────────────────────┐
│ 25/09/1999  SAT   10:23     │   Standby (Time and Receive mode Display)
│ Fax Tel      STANDARD       │
└─────────────────────────────┘
         │   (1) User data mode selection
         │       Press the Data registration.
         ▼
┌─────────────────────────────┐
│ REGISTRATION                │
│ 1. DATA REGISTRATION        │
└─────────────────────────────┘
         │   (2) Service data mode selection
         │       Press the [ # ] button.
         ▼
┌─────────────────────────────┐
│ SERVICE MODE                │
│ #1 SSSW                     │
└─────────────────────────────┘
         │   (3) Menu item selection
         │       Select the menu item by pressing the ∧ or ∨ button.
         ▼
┌─────────────────────────────┐
│ SERVICE MODE                │
│ #3 NUMERIC Param.           │
└─────────────────────────────┘
         │
         │       Press the Set button.
         ▼
┌─────────────────────────────┐
│ #3 NUMERIC Param.           │
│ 01:                    0    │
└─────────────────────────────┘
         │   (4) Data registration
         │       Input the data and press the Set button.
         │
         │   Press the Stop button to return to standby.
```

**Figure 3-9 Service Data Setting Method**

⚠ When using service mode, detach the telephone line from the main unit. Proper reception cannot be guaranteed when using service mode.

### 5.2.3 Service data settings

**Service data**

| | Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **#1 SSSW** | SW01 | 0 | 0 | – | 1 | 0 | – | 0 | 0 | Error management |
| (Service soft switch setting) | SW02 | – | – | – | – | – | – | – | 0 | Memory clear list output setting |
| | SW03 | 0 | 0 | 0 | 0 | – | – | 0 | – | Echo solution setting |
| | SW04 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Communication trouble solution settings |
| | SW05 | – | – | 0 | 0 | 0 | – | – | – | Standard function (DIS signal) setting |
| | SW06 | – | – | 0 | – | – | – | 0 | 0 | Scan condition settings |
| | SW07 | – | – | – | – | – | – | – | – | Not used |
| | SW08 | – | – | – | – | – | – | – | – | Not used |
| | SW09 | – | – | – | – | – | – | 0 | 0 | Communications result display function settings |
| | SW10 | – | – | – | – | – | – | – | – | Not used |
| | SW11 | – | – | – | – | – | – | – | – | Not used |
| | SW12 | 0 | – | 0 | 0 | 0 | 0 | 1 | 0 | Page timer settings |
| | SW13 | – | – | – | – | – | – | – | – | Not used |
| | SW14 | – | – | – | – | – | – | – | – | Not used |
| | SW15 | – | 0 | – | – | – | – | – | – | Dial inn FAX/TEL switching function setting |
| | SW16 | – | – | – | – | – | – | – | – | Not used |
| | SW17 | – | – | – | – | – | – | – | – | Not used |
| | SW18 | – | – | – | – | – | – | 0 | 0 | Communication trouble solutions settings (2) |
| | SW19 | – | – | – | – | – | – | – | – | Not used |
| | SW20 | – | – | – | – | – | – | – | – | Copy function settings |
| | SW21 | – | – | – | – | – | – | – | – | Not used |
| | SW22 | – | – | – | – | 0 | – | – | – | Field Requests/Troubleshooting Issues |
| | SW23 | – | – | – | – | – | – | – | – | Not used |
| | SW24 | – | – | – | – | – | – | – | – | Not used |
| | SW25 | – | – | – | – | – | – | 0 | 0 | Report display function settings |
| | SW26 | 0 | 0 | – | – | 0 | – | – | 0 | Transmission function settings |
| | SW27 | – | – | – | – | – | – | – | – | Not used |
| | SW28 | – | – | 0 | 0 | 0 | 0 | 0 | 0 | V.8/V.34 protocol settingss |
| | SW29 | – | – | – | – | – | – | – | – | Not used |
| | SW30 | – | – | – | – | – | – | – | – | Not used |

**Figure 3-10 Service Data (page 1)**

The switches marked "–" are not used.  Do not change their settings.

```
                          01:                    Not used
─ #2 MENU ────────────    02:                    Not used
 (Menu switch settings)   03:                    Not used
                          04:                    Not used
                          05: ┬ ON               NL equalizer setting
                              └ OFF

        (∧)               06: ┬ DIAL             Line monitor setting
                              ├ SERVICEMAN
         ↑                    └ OFF
         ↕
         ↓
        (∨)               07: ─ 10 (0~15)        Transmission level setting
                          08: ┬ 3429 baud        V.34 Baud rate
                              ├ 3200 baud
                              ├ 3000 baud
                              ├ 2800 baud
                              ├ 2743 baud
                              └ 2400 baud
                          09: ─ 33.6 bps         V.34 Transmission speed
                               (2400 x n:1≤n≤14)
                          10: ┬ 50 Hz            Frequency of pseudo ring
                              ├ 25 Hz            signal
                              └ 17 Hz

                          11 :  Items 11 to 20:
                        ≋                         Not used
                          20:
```
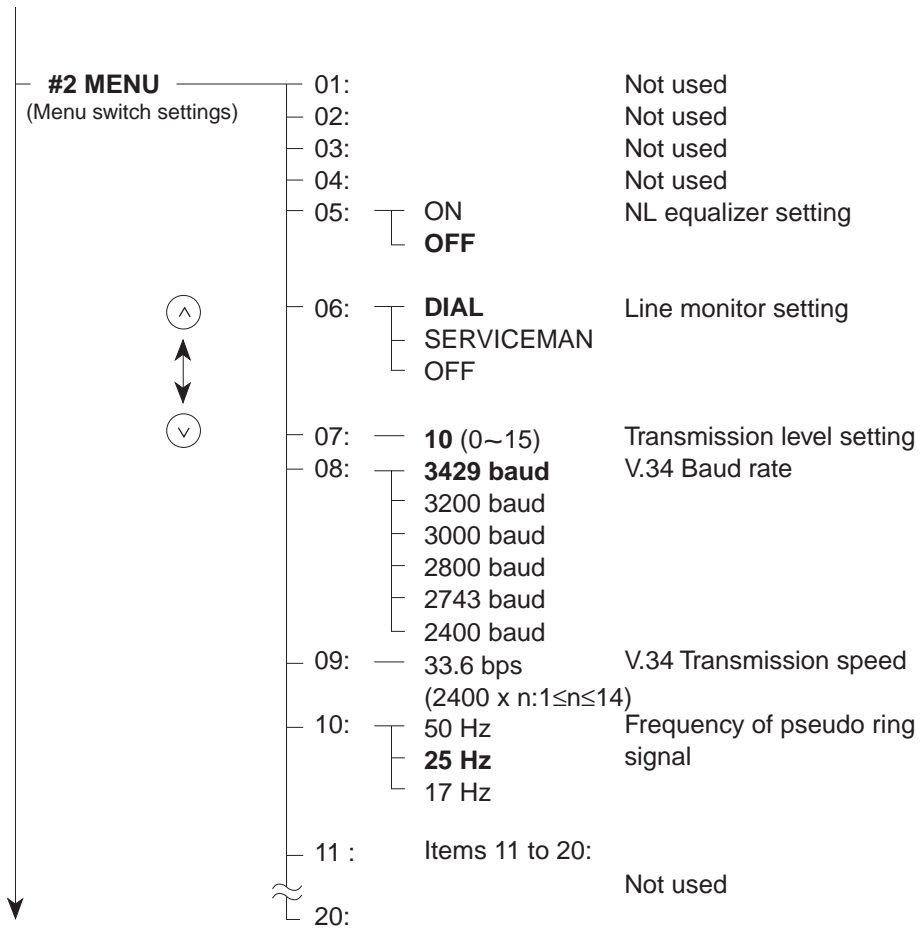
Figures in boldface indicate the default setting.

**Figure 3-11 Service Data (page 2)**

No. 01 to 04, 11 to 20 are not used.  Do not change their settings.

**#3 NUMERIC Param.**
(Numeric parameter settings)

| | Default | Range | |
|---|---|---|---|
| 01: | 0 | | Not used |
| 02: | 10 (10%) | (1~99) | RTN signal transmission condition (1) |
| 03: | 15 (15 lines) | (2~99) | RTN signal transmission condition (2) |
| 04: | 12 (12 times) | (1~99) | RTN signal transmission condition (3) |
| 05: | 4 | | Pause time for NCC (before the ID code) |
| 06: | 4 | | Pause time for NCC (after the ID code) |
| 07: | 350 (3500 ms) | (0~9999) | Prepause time for outgoing calls |
| 08: | 0 | | Not used |
| 09: | 6 (6 digits) | (1~20) | The number of digits in telephone number compared against TSI signal to be matched for restricted receiving function |
| 10: | 5500 (55 seconds) | (0~9999) | Line connection detection time (T0 timer) |
| 11: | 3500 (35 seconds) | (0~9999) | T1 timer (Rx) |
| 12: | 0 | | Not used |
| 13: | 1310 (13.1 seconds) | (0~9999) | Maximum time to receive oneline of image data |
| 14: | 0 | | Not used |
| 15: | 120 (1200 ms) | (0~999) | Not used |
| 16: | 4 (4 seconds) | (0~9) | Hooking detection time |
| 17: | 100 (1000 ms) | (0~999) | Pseudo RBT transmission from CML on time until start |
| 18: | 0 (0 ms) | (0~999) | Pseudo RBT signal pattern: On time |
| 19: | 400 (4000 ms) | (0~999) | Pseudo RBT signal pattern: Off time (short) |
| 20: | 100 (1000 ms) | (0~999) | Pseudo RBT signal pattern: Off time (long) |
| 21: | 0 (0ms) | (0~999) | Pseudo ring pattern: On time setting |
| 22: | 400 (4000 ms) | (0~999) | Pseudo ring pattern: Off time (short) |
| 23: | 44 | | Pseudo ring pattern: Off time (long) |
| 24: | 10 | (0~20) | Not used |
| 25: | 60 (600 s) | (0~999) | Pseudo-RBT signal transmission level |
| 26: | 44 | | Answering machine connection function signal detection level |
| 27: | 0 | | Not used |
| 28: | 0 | | Not used |
| 29: | 0 | | Not used |
| 30: | 0 | | Not used |
| | | | Not used |

**Figure 3-12 Service Data (page 3)**

No. 01, 08, 12, 14, 23, and 26 to 30 are not used.  Do not change their settings.

**NOTE**

**#3 NUMERIC PARAM. (Numeric parameter settings)**

The relationship between the settings and the detection levels is as follows:

**Parameter 24**

| | | | | |
|---|---|---|---|---|
| 0: Not used | 1: Not used | 2: Not used | 3: Not used | 4: Not used |
| 5:   0 dBm | 6:  -1 dBm | 7:  -2 dBm | 8:  -3 dBm | 9:  -4 dBm |
| 10:  **-5 dBm** | 11:  -6 dBm | 12:  -7 dBm | 13:  -8 dBm | 14:  -9 dBm |
| 15: -10 dBm | 16: -11 dBm | 17: -12 dBm | 18: -13 dBm | 19: -14 dBm |
| 20: -15 dBm | | | | |

**#4 NCU**
(NCU settings)
- TONE/PULSE
- DIAL TONE
- 2nd DIAL TONE
- BUSY TONE 0
- BUSY TONE 1
- REORDER
- TONE
- MULTI
- AUTO RX
- CNG DETECT
- SPECIAL
- RKEY
- PBX DIAL TONE
- PBX BUSY TONE

**#5 TYPE**
(Type setting)
- EUROPE
- U. K.
- SWEDEN
- SWISS
- AUSTRIA
- DENMARK
- NORWAY
- HOLLAND
- BELGIUM
- AUSTRALIA
- FINLAND
- N. Z.
- ITALY
- SPAIN
- PORTUGAL
- IRELAND
- HONG KONG
- MALAYSIA
- HUNGARY
- SAF
- CHINA
- GERMAN
- FRANCE
- SINGAPORE
- CZECH
- SLOVENIA
- ASIA

**#6 GENESIS (UHQ)**
(Genesis function settings)
- Bit SW
- SLICE
- GAMMA

**Figure 3-13 Service Data (page 4)**

**#4 NCU (NCU settings)**

The values of these items are all set to match a specific nation's communications standards by the #5 TYPE setting.

**#6 GENESIS (UHQ function settings)**

Tampering with this setting may cause the scanned image quality to deteriorate.

Do not change these settings.

| | Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SW01 | – | – | – | – | – | – | – | – | Not used |
| | SW02 | – | – | – | – | – | – | – | – | Not used |
| | SW03 | – | – | – | – | – | – | – | – | Not used |
| | SW04 | – | – | – | – | – | – | – | 0 | Cassette selection settings |
| | SW05 | – | 0 | 0 | 0 | – | 0 | 0 | 0 | Reduction/cassette selection settings |
| | SW06 | – | – | – | – | – | 1 | 0 | 0 | Reduction settings |

**#7 PRINTER**
(Printer function settings)

1. SSSW

SW07~20: Not used
SW20

2. Numeric Param

| 01: | 14 | Maximum drop-out range |
|---|---|---|
| 02: | 0 | Not used |
| 03: | 0 | Not used |
| 04: | 2 | Leading edge margin |
| 05: | 6 | Trailing edge margin |
| 06: | 0 | |
| 07: | 0 | |
| 08: | 0 | |
| 09: | 0 | |
| 10: | 0 | Not used |
| 11: | 0 | |

Item 12~30: Not used
30:

3. PRINTER RESET — Yes = ( ∗ )    Printer section reset function
No = ( # )

**Figure 3-14 Service Data (page 5)**

**#8 CLEAR**
(Data initialization mode settings)

| | |
|---|---|
| TEL | Dialling data initialization |
| USER SW | User data and service data #1 to #3 initialization |
| SERVICE SW | User data and service data #1 to #3 and #6 to #7 initialization |
| NCU | #4 NCU setting data initialization |
| SERVICE DATA | Data on system dump list initialization |
| REPORT | Data on activity report initialization |
| COUNTER | Total number of pages printed/scanned |
| ALL | All user data, service data, activity management data, and image data initialization (except COUNTER) |

**#9 ROM**
(ROM management)

| | |
|---|---|
| EC-XX-XX | Version No. and Checksum display |
| ○○○○○○ △△△△ □□□□ | |

**TEST MODE**            (See page 3-53)

**Figure 3-15 Service Data (page 6)**

REFERENCE
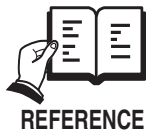
For details on test mode, see *6.1  Service Test Functions on page 3-53*.

## 5.2.4 Explanation of service data
### a) SSSW (Service Soft Switch settings)

The items registered and set by each of these switches comprise 8-bit switches.  The figure below shows which numbers are assigned to which bits.  Each bit has a value of either 0 or 1.
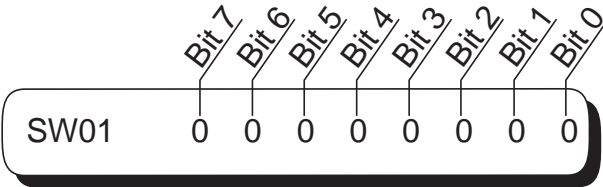
**Figure 3-16 Bit Switch Display**

See the chart in the service data shown in *this Chapter, 5.2.3 Service data settings* to see effective bits and their default values.  With the exception of new switches added to this model the meanings (functions) of the bits are not described in this manual except the new switches added to this model.  See *the G3 Facsimile Service Data Handbook* (supplied separately) for details of the switches.

Below are examples showing how to read bit switch tables.

| Bit | Function | 1 | 0 |
|-----|----------|---|---|
| 0 | Service error code | Output | **Not Output** |
| 1 | Error dump list | Output | **Not Output** |
| 2 | Not used | | |
| 3 | Copy function | No | **Yes** |
| 4 | ##300 series service error code | Output | **Not Output** |
| 5 | Not used | | |
| 6 | Date & Time setting restriction | Setting possible | **Setting restricted** |
| 7 | User setting restriction | Setting possible | **Setting restricted** |

**Figure 3-17 How to Read Bit Switch Tables**

### 5.2.5 New SSSWs/parameters added to this model
#### #1 SSSW (service soft switch setting)
##### SW01 (service soft switch 01: error management)

| Bit | Function | 1 | 0 |
|-----|----------|---|---|
| 0 | Service error code | Output | **Not output** |
| 1 | Error dump list | Output | **Not output** |
| 2 | Not used | | |
| 3 | Copy function | No | **Yes** |
| 4 (New) | ##300 series service error code | Output | **Not output** |
| 5 | Not used | | |
| 6 | Data & Time setting restriction | Setting possible | **Setting restricted** |
| 7 | User setting restriction | Setting possible | **Setting restricted** |

**[Bit 4]**

Even when Bit0 is set to "**NOT OUTPUT**", you can select whether or not to output ##300 series Service Error Codes, caused by hardware malfunction.

When "**OUTPUT**" is selected, ##300 series Service Error Codes are displayed and included in reports.

When "**NOT OUTPUT**" is selected, no Service Error Codes are displayed.

#### #1 SSSW (service soft switch setting)
##### SW05 (service soft switch 05: standard function <DIS signal> settings)

| Bit | Function | 1 | 0 |
|-----|----------|---|---|
| 0 | Not used | | |
| 1 | Not used | | |
| 2 | Not used | | |
| 3 | Send DIS signal bits 33 and over | No | **Yes** |
| 4 | Recording paper length availability deciared in DIS signal | A4 size | **Abiitrary size** |
| 5 (New) | Declare LTR/LGL in DIS signal | No | **Yes** |
| 6 | Not used | | |
| 7 | Not used | | |

**[Bit 5]**

Select whether to declare LTR or LGL in DIS signal when the LTR or LGL recording paper is used.

The recording paper is selected according to the setting of #7 printer SW04 bit 0.

#### #1 SSSW (service soft switch setting)
##### SW15 (service soft switch 15: Dial inn FAX/TEL switching function setting)

| Bit | Function | 1 | 0 |
|-----|----------|---|---|
| 0 | Not used | | |
| 1 | Not used | | |
| 2 | Not used | | |
| 3 | Not used | | |
| 4 | Not used | | |
| 5 | Not used | | |
| 6 (New) | Detect continuous signal at FAX/TEL switching | Yes | **No** |
| 7 | Not used | | |

**[Bit 6]**

You may enable or disable detection of ROT continuous signal for FAX/TEL switching.

Normally, only ROT intermittent signals are detected for FAX/TEL switching. If you need to detect both in view of exchange specifications,select "1" to enable detection.

**3-38**

**#1 SSSW (service soft switch setting)**
**SW18 (service soft switch 18: communication trouble solutions settings (2))**

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 (New) | Detection of carrier disconnection between the DCS signal and the TCF signal | Detect | **Do not detect** |
| 1 (New) | Waiting time for carrier disconnection between the DCS signal and the TCF signal | 600 ms | **300 ms** |
| 2 | Not used | | |
| 3 | Not used | | |
| 4 | Not used | | |
| 5 | Not used | | |
| 6 | Not used | | |
| 7 | Not used | | |

**[Bit 0]**

It is possible to select whether or not to detect carrier disconnection between the DCS signal and the TCF signal during reception.

If the receiving machine returns an FTT signal while the other machine (PC-FAX) is transmitting a TCF signal and a reception error occurs, set this bit to "1".

If an error still occurs, set #1 SSSW SW18 Bit to "1".

**[Bit 1]**

It is possible to select the detection time for carrier disconnection between the DCS signal and TCF signal during reception.

This bit is available for use when #1 SSSW SW18 Bit 0 is set to "1".

**#1 SSSW (service soft switch setting)**
**SW22 (service soft switch 22: Field Requests/Troubleshooting Issues)**

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 | Not used | | |
| 1 | Not used | | |
| 2 | Not used | | |
| 3 (New) | Prohibit manual polling | Yes | **No** |
| 4 | Not used | | |
| 5 | Not used | | |
| 6 | Not used | | |
| 7 | Not used | | |

**[Bit 3]**
You may disable polling initiated by manual operation (off hook + start).

**#1 SSSW (service soft switch setting)**
**SW26 (service soft switch 26: Transmission function settings)**

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 | Compulsory direct transmission | Set | **Not set** |
| 1 | Not used | | |
| 2 | Not used | | |
| 3 (New) | Prohibit broadcast | Yes | **No** |
| 4 | Not used | | |
| 5 | Not used | | |
| 6 | When STOP key is pressed during a sequential broadcasting | Only cancel communication | **Cancel all communication** |
| 7 | Error transmission report when transmission is stopped | Not output | **Output** |

**[Bit 3]**
You may disable selection of multiple addresses to prevent broadcasting by mistake (on the part of the user); however, this setting will not affect broadcasting by group dialing.

**#1 SSSW (service soft switch setting)**
**SW28 (service soft switch 28: V.8/V.34 protocol settings)**

| Bit | Function | 1 | 0 |
|---|---|---|---|
| 0 (New) | Caller V.8 protocol | No | **Yes** |
| 1 (New) | Called party V.8 protocol | No | **Yes** |
| 2 (New) | Caller V.8 protocol late start | No | **Yes** |
| 3 (New) | Called party V.8 protocol late start | No | **Yes** |
| 4 (New) | V.34 reception fallback | Prohibited | **Not prohibited** |
| 5 (New) | V.34 transmission fallback | Prohibited | **Not prohibited** |
| 6 | Not used | | |
| 7 | Not used | | |

**[Bit 0]**

Select whether to use the V.8 protocol when calling. If No is selected, the V.8 protocol is inhibited at calling and the V.21 protocol is used.

**[Bit 1]**

Select whether to use the V.8 protocol when calling. If No is selected, the V.8 protocol is inhibited when called and the V.21 protocol is used.

**[Bit 2]**

If ANSam signal is not received during transmission, select whether to use the V.8 protocol when the other fax machine declares the V.8 protocol in DIS signal. If No is selected, the CI signal is not transmitted and the V.8 protocol is not used even if the DIS that specifies the V.8 protocol is received.
The V.8 late start is not executed during manual transmission regardless of this setting.

**[Bit 3]**

Select whether to declare the V.8 protocol in DIS signal for reception. If No is selected, the V.8 protocol cannot be used because it is not declared in DIS signal.
The V.8 late start is not executed during manual reception regardless of this setting.

**[Bit 4]**

Select whether the receiver falls back V.34 reception. If Prohibited is selected, the receiver does not fall back.

**[Bit 5]**

Select whether the transmitter falls back V.34 transmission. If Prohibited is selected, the transmitter does not fallback.

### #2 MENU

| No. | Function | Selecting range | Default setting |
|-----|----------|-----------------|-----------------|
| 08 | V.34 max. baud rate | 2400 ~ 3429 | 3429 (3429 baud) |
| 09 | V.34 max. transmission speed | 24 ~ 33.6 | 33.6 (33600 bps) |

**[No. 08]**

Select the maximum baud rate for V.34 transmission: 3429, 3200, 3000, 2800, 2743, and 2400.

**[No. 09]**

Select the maximum transmission speed for V.34 transmission: 2400 to 33600 bps.
$(2400 \times n: 1 \leq n \leq 14)$.

> **NOTE**
> This model cannot use 2800 baud due to its modem specification. If it is set to 2800 baud, the maximum baud rate is 2743 baud.

### #3 NUMERIC PARAM. (numeric parameter settings)

| No. | Function | Selecting range | Default setting |
|-----|----------|-----------------|-----------------|
| 07 | Prepause time for outgoing calls | 0-9999 | 350 (3500 ms) |
| 10 | T0 Timer | 0-9999 | 5500 (55 second) |
| 11 | T1 Timer (Rx) | 0-9999 | 3500 (35 second) |
| 13 | Maximum time to receive one line of image data | 500-3000 | 1300 (13 second) |

**[No. 7]**

When an automatic outgoing call is made, it is possible to set the time from when the circuit is closed until the outgoing call is made.

Adjust this parameter if an external outgoing call cannot be made via the private branch exchange.

**[No. 10]**

The "wait time after transmission of a dialing signal ends until a significant signal is detected in transmission" was formerly designated as T1 timer with parameter 10.

However, ITU-T recommends that it should be designated as T0 timer, so parameter 10 has been renamed to T0 timer and the default time-out time has been changed from 35 to 55 seconds.

> **NOTE**
> The T1 timer for the transmitter (wait time after a significant CED or V21 flag significant signal is detected until the next significant signal is detected) is fixed at 35 seconds.

**[No. 11]**

Set the T1 timer for the receiver (wait time after DIS transmission starts until a significant signal is received.)

If frequent errors occur during reception (2 instances) because of line connection conditions, raise the value of this parameter.

**[No. 13]**

Set the maximum time to receive one line of image data when image data is received.

If the other party is a computer fax and the time to receive one line of image data is long, raise the value of this parameter to increase the maximum reception time.

**#7 PRINTER**
 **service soft switch setting**
  **SW04 (switch 04: reduction/cassette selection settings)**

| Bit | Function | 1 | 0 |
|-----|----------|---|---|
| 0 (New) | When LTR/LGL specification is received by DCS, the cassette is selected according to the specification | No | **Yes** |
| 1 | Not used | | |
| 2 | Not used | | |
| 3 | Not used | | |
| 4 | Not used | | |
| 5 | Not used | | |
| 6 | Not used | | |
| 7 | Not used | | |

**[Bit 0]**

Selects whether or not the recording paper is selected according to the DCS specification when the other fax machine specifies LTR or LGL in DCS signal during reception. If it is 0, the specified recording paper is used regardless of the paper length. If it is 1, the receiving station selects the recording paper. This switch is valid when #1 SW05 bit 5 is 0.

**SSSW Default Setting**

| TYPE | EUROPE | U.K. | SWEDEN | SWISS | AUSTRIA | DENMARK |
|---|---|---|---|---|---|---|
| **#1 SSSW** | | | | | | |
| SW01 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 |
| SW02 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW03 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW04 | 10000000 | 10000000 | 10000010 | 10000010 | 10000010 | 10000000 |
| SW05 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW06 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 |
| SW07 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW08 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW09 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW10 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW11 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW12 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 |
| SW13 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW14 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW15 | 00000000 | 01000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW16 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 |
| SW17 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW18 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW19 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW20 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW21 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW22 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW23 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW24 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW25 | 00000000 | 00000000 | 00000000 | 00000000 | 00000001 | 00000000 |
| SW26 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW27 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW28 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW29 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW30 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| **#2 MENU** | | | | | | |
| 05: | OFF | OFF | OFF | OFF | OFF | OFF |
| 06: | DIAL | DIAL | DIAL | DIAL | DIAL | DIAL |
| 07: | 10 | 10 | 10 | 10 | 10 | 10 |
| 08: | 3429 | 3429 | 3429 | 3429 | 3429 | 3429 |
| 09: | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 |
| 10: | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz |

**SSSW Default Setting**

| TYPE | NORWAY | HOLLAND | BELGIUM | AUSTRALIA | FINLAND | N.Z. |
|---|---|---|---|---|---|---|
| **#1 SSSW** | | | | | | |
| SW01 | 00010000 | 00010000 | 00010000 | 00010000 | 00010001 | 00010000 |
| SW02 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW03 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW04 | 10000010 | 10000010 | 10000000 | 10000000 | 10000000 | 10000000 |
| SW05 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW06 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 |
| SW07 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW08 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW09 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW10 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW11 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW12 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 |
| SW13 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW14 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW15 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW16 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 |
| SW17 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW18 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW19 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW20 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW21 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW22 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW23 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW24 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW25 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW26 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW27 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW28 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW29 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW30 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| | | | | | | |
| **#2 MENU** | | | | | | |
| 05: | OFF | OFF | OFF | OFF | OFF | OFF |
| 06: | DIAL | DIAL | DIAL | DIAL | DIAL | DIAL |
| 07: | 10 | 10 | 10 | 12 | 10 | 13 |
| 08: | 3429 | 3429 | 3429 | 3429 | 3429 | 3429 |
| 09: | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 |
| 10: | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz |

**SSSW Default Setting**

| TYPE | ITALY | SPAIN | PORTUGAL | IRELAND | HONG KONG | MALAYSIA |
|---|---|---|---|---|---|---|
| **#1 SSSW** | | | | | | |
| SW01 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 |
| SW02 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW03 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW04 | 10000010 | 10000010 | 10000010 | 10000000 | 10000000 | 10000000 |
| SW05 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW06 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 |
| SW07 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW08 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW09 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW10 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW11 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW12 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 |
| SW13 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW14 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW15 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW16 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 |
| SW17 | 00000010 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW18 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW19 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW20 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW21 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW22 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW23 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW24 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW25 | 00000000 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW26 | 10000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW27 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW28 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW29 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW30 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| **#2 MENU** | | | | | | |
| 05: | OFF | OFF | OFF | OFF | OFF | OFF |
| 06: | DIAL | DIAL | DIAL | DIAL | DIAL | DIAL |
| 07: | 10 | 10 | 10 | 10 | 10 | 10 |
| 08: | 3429 | 3429 | 3429 | 3429 | 3429 | 3429 |
| 09: | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 |
| 10: | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz |

## SSSW Default Setting

| TYPE | HUNGARY | SAF | CHINA | GERMAN | SINGAPORE | CZECH |
|---|---|---|---|---|---|---|
| **#1 SSSW** | | | | | | |
| SW01 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 | 00010000 |
| SW02 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW03 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW04 | 10000000 | 10000000 | 10000000 | 00000010 | 10000000 | 10000000 |
| SW05 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW06 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 | 10000000 |
| SW07 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW08 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW09 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW10 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW11 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW12 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 | 00000010 |
| SW13 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW14 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW15 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW16 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 | 00000011 |
| SW17 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW18 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW19 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW20 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW21 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW22 | 00000000 | 00000000 | 00000000 | 00001000 | 00000000 | 00000000 |
| SW23 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW24 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW25 | 00000000 | 00000000 | 00000000 | 00000001 | 00000000 | 00000000 |
| SW26 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW27 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW28 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW29 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| SW30 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| **#2 MENU** | | | | | | |
| 05: | OFF | OFF | OFF | OFF | OFF | OFF |
| 06: | DIAL | DIAL | DIAL | DIAL | DIAL | DIAL |
| 07: | 10 | 10 | 13 | 10 | 10 | 10 |
| 08: | 3429 | 3429 | 3429 | 3429 | 3429 | 3429 |
| 09: | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 | 33.6 |
| 10: | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz | 25Hz |

**SSSW Default Setting**

| TYPE | SLOVENIA | FRANCE | ASIA |
|---|---|---|---|
| **#1 SSSW** | | | |
| SW01 | 00010000 | 00010000 | 00010000 |
| SW02 | 00000000 | 00000000 | 00000000 |
| SW03 | 00000000 | 00000000 | 00000000 |
| SW04 | 10000000 | 00000010 | 10000000 |
| SW05 | 00000000 | 00000000 | 00000000 |
| SW06 | 10000000 | 10000000 | 10000000 |
| SW07 | 00000000 | 00000000 | 00000000 |
| SW08 | 00000000 | 00000000 | 00000000 |
| SW09 | 00000000 | 00000000 | 00000000 |
| SW10 | 00000000 | 00000000 | 00000000 |
| SW11 | 00000000 | 00000000 | 00000000 |
| SW12 | 00000010 | 00000010 | 00000010 |
| SW13 | 00000000 | 00000000 | 00000000 |
| SW14 | 00000000 | 00000000 | 00000000 |
| SW15 | 00000000 | 00000000 | 00000000 |
| SW16 | 00000011 | 00000011 | 00000011 |
| SW17 | 00000000 | 00000000 | 00000000 |
| SW18 | 00000000 | 00000000 | 00000000 |
| SW19 | 00000000 | 00000000 | 00000000 |
| SW20 | 00000000 | 00000000 | 00000000 |
| SW21 | 00000000 | 00000000 | 00000000 |
| SW22 | 00000000 | 00000000 | 00000000 |
| SW23 | 00000000 | 00000000 | 00000000 |
| SW24 | 00000000 | 00000000 | 00000000 |
| SW25 | 00000000 | 00000001 | 00000000 |
| SW26 | 00000000 | 00000000 | 00000000 |
| SW27 | 00000000 | 00000000 | 00000000 |
| SW28 | 00000000 | 00000000 | 00000000 |
| SW29 | 00000000 | 00000000 | 00000000 |
| SW30 | 00000000 | 00000000 | 00000000 |
| | | | |
| **#2 MENU** | | | |
| 05: | OFF | OFF | OFF |
| 06: | DIAL | DIAL | DIAL |
| 07: | 10 | 10 | 10 |
| 08: | 3429 | 3429 | 3429 |
| 09: | 33.6 | 33.6 | 33.6 |
| 10: | 25Hz | 25Hz | 25Hz |

**SSSW Default Setting**

| TYPE | EUROPE | U.K. | SWEDEN | SWISS | AUSTRIA | DENMARK |
|---|---|---|---|---|---|---|
| **#3 NUMERIC Param** | | | | | | |
| 02: | 10 | 10 | 10 | 10 | 10 | 10 |
| 03: | 15 | 15 | 15 | 15 | 15 | 15 |
| 04: | 12 | 12 | 12 | 12 | 12 | 12 |
| 05: | 4 | 4 | 4 | 4 | 4 | 4 |
| 06: | 4 | 1 | 4 | 4 | 4 | 4 |
| 07: | 350 | 350 | 350 | 350 | 350 | 350 |
| 09: | 6 | 6 | 6 | 6 | 6 | 6 |
| 10: | 5500 | 5500 | 5500 | 5500 | 5500 | 5500 |
| 11: | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 13: | 1310 | 1310 | 1310 | 1310 | 1310 | 1310 |
| 15: | 120 | 120 | 120 | 120 | 120 | 120 |
| 16: | 4 | 4 | 4 | 4 | 4 | 4 |
| 17: | 100 | 100 | 100 | 40 | 100 | 75 |
| 18: | 0 | 0 | 0 | 20 | 0 | 0 |
| 19: | 400 | 400 | 400 | 200 | 400 | 250 |
| 20: | 100 | 100 | 100 | 100 | 100 | 100 |
| 21: | 0 | 0 | 0 | 0 | 0 | 0 |
| 22: | 400 | 400 | 400 | 400 | 400 | 400 |
| 23: | 44 | 44 | 44 | 44 | 44 | 44 |
| 24: | 10 | 10 | 10 | 10 | 10 | 10 |
| 25: | 60 | 60 | 60 | 60 | 60 | 60 |
| 26: | 44 | 44 | 44 | 44 | 44 | 44 |
| **#5 TYPE** | EUROPE | U.K. | SWEDEN | SWISS | AUSTRIA | DENMARK |

**SSSW Default Setting**

| TYPE | NORWAY | HOLLAND | BELGIUM | AUSTRALIA | FINLAND | N.Z. |
|---|---|---|---|---|---|---|
| **#3 NUMERIC Param** | | | | | | |
| 02: | 10 | 10 | 10 | 10 | 10 | 10 |
| 03: | 15 | 15 | 15 | 15 | 15 | 15 |
| 04: | 12 | 12 | 12 | 12 | 12 | 12 |
| 05: | 4 | 4 | 4 | 4 | 4 | 4 |
| 06: | 4 | 4 | 4 | 4 | 4 | 4 |
| 07: | 350 | 350 | 350 | 350 | 350 | 350 |
| 09: | 6 | 6 | 6 | 6 | 6 | 6 |
| 10: | 5500 | 5500 | 5500 | 5500 | 5500 | 5500 |
| 11: | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 13: | 1310 | 1310 | 1310 | 1310 | 1310 | 1310 |
| 15: | 120 | 120 | 120 | 120 | 120 | 120 |
| 16: | 4 | 4 | 4 | 4 | 3 | 2 |
| 17: | 30 | 100 | 100 | 100 | 100 | 100 |
| 18: | 30 | 0 | 0 | 0 | 0 | 0 |
| 19: | 400 | 400 | 300 | 400 | 400 | 400 |
| 20: | 30 | 100 | 100 | 100 | 100 | 100 |
| 21: | 30 | 0 | 0 | 0 | 0 | 0 |
| 22: | 400 | 400 | 300 | 400 | 400 | 400 |
| 23: | 44 | 44 | 44 | 44 | 44 | 44 |
| 24: | 10 | 10 | 10 | 10 | 12 | 10 |
| 25: | 60 | 60 | 60 | 60 | 60 | 60 |
| 26: | 44 | 44 | 44 | 44 | 44 | 44 |
| **#5 TYPE** | NORWAY | HOLLAND | BELGIUM | AUSTRALIA | FINLAND | N.Z. |

**SSSW Default Setting**

| TYPE | ITALY | SPAIN | PORTUGAL | IRELAND | HONG KONG | MALAYSIA |
|---|---|---|---|---|---|---|
| **#3 NUMERIC** | | | | | | |
| **Param** | | | | | | |
| 02: | 10 | 10 | 10 | 10 | 10 | 10 |
| 03: | 15 | 15 | 15 | 15 | 15 | 15 |
| 04: | 12 | 12 | 12 | 12 | 12 | 12 |
| 05: | 4 | 15 | 4 | 4 | 4 | 4 |
| 06: | 4 | 3 | 4 | 4 | 1 | 4 |
| 07: | 350 | 350 | 350 | 350 | 350 | 350 |
| 09: | 6 | 6 | 6 | 6 | 6 | 6 |
| 10: | 5500 | 5500 | 5500 | 5500 | 5500 | 5500 |
| 11: | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 13: | 1310 | 1310 | 1310 | 1310 | 1310 | 1310 |
| 15: | 120 | 120 | 120 | 120 | 120 | 120 |
| 16: | 4 | 4 | 4 | 4 | 4 | 4 |
| 17: | 100 | 100 | 100 | 100 | 40 | 100 |
| 18: | 0 | 0 | 0 | 0 | 20 | 0 |
| 19: | 400 | 400 | 400 | 400 | 200 | 400 |
| 20: | 100 | 100 | 100 | 100 | 40 | 100 |
| 21: | 0 | 0 | 0 | 0 | 20 | 0 |
| 22: | 400 | 400 | 400 | 400 | 200 | 400 |
| 23: | 44 | 44 | 44 | 44 | 44 | 44 |
| 24: | 10 | 10 | 10 | 10 | 10 | 10 |
| 25: | 60 | 60 | 60 | 60 | 60 | 60 |
| 26: | 44 | 44 | 44 | 44 | 44 | 44 |
| **#5 TYPE** | ITALY | SPAIN | PORTUGAL | IRELAND | HONG KONG | MALAYSIA |

**SSSW Default Setting**

| TYPE | HUNGARY | SAF | CHINA | GERMAN | SINGAPORE | CZECH |
|---|---|---|---|---|---|---|
| **#3 NUMERIC Param** | | | | | | |
| 02: | 10 | 10 | 10 | 8 | 10 | 10 |
| 03: | 15 | 15 | 15 | 15 | 15 | 15 |
| 04: | 12 | 12 | 12 | 6 | 12 | 12 |
| 05: | 4 | 4 | 4 | 4 | 4 | 4 |
| 06: | 4 | 4 | 4 | 4 | 4 | 4 |
| 07: | 350 | 350 | 350 | 350 | 350 | 350 |
| 09: | 6 | 6 | 6 | 6 | 6 | 6 |
| 10: | 5500 | 3500 | 4300 | 9000 | 5500 | 5500 |
| 11: | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 13: | 1310 | 1310 | 1200 | 1310 | 1310 | 1310 |
| 15: | 120 | 120 | 120 | 120 | 120 | 120 |
| 16: | 4 | 4 | 4 | 4 | 4 | 4 |
| 17: | 100 | 100 | 100 | 100 | 100 | 100 |
| 18: | 0 | 0 | 0 | 0 | 0 | 0 |
| 19: | 400 | 400 | 400 | 400 | 400 | 400 |
| 20: | 100 | 100 | 100 | 100 | 100 | 100 |
| 21: | 0 | 0 | 0 | 0 | 0 | 0 |
| 22: | 400 | 400 | 400 | 400 | 400 | 400 |
| 23: | 44 | 44 | 44 | 44 | 44 | 44 |
| 24: | 10 | 10 | 10 | 10 | 10 | 10 |
| 25: | 60 | 60 | 60 | 60 | 60 | 60 |
| 26: | 44 | 44 | 44 | 44 | 44 | 44 |
| **#5 TYPE** | HUNGARY | SAF | CHINA | GERMAN | SINGAPORE | CZECH |

| TYPE | SLOVENIA | FRANCE | ASIA |
|---|---|---|---|
| **#3 NUMERIC Param** | | | |
| 02: | 10 | 8 | 10 |
| 03: | 15 | 15 | 15 |
| 04: | 12 | 12 | 12 |
| 05: | 4 | 4 | 4 |
| 06: | 4 | 4 | 4 |
| 07: | 350 | 350 | 350 |
| 09: | 6 | 6 | 6 |
| 10: | 5500 | 5500 | 5500 |
| 11: | 3500 | 3800 | 3500 |
| 13: | 1310 | 1310 | 1310 |
| 15: | 120 | 120 | 120 |
| 16: | 4 | 4 | 4 |
| 17: | 100 | 30 | 100 |
| 18: | 0 | 30 | 0 |
| 19: | 400 | 400 | 400 |
| 20: | 100 | 150 | 100 |
| 21: | 0 | 0 | 0 |
| 22: | 400 | 300 | 400 |
| 23: | 44 | 44 | 44 |
| 24: | 10 | 10 | 10 |
| 25: | 60 | 60 | 60 |
| 26: | 44 | 44 | 44 |
| **#5 TYPE** | SLOVENIA | FRANCE | ASIA |

# 6. TEST FUNCTIONS

## 6.1 Service Test Functions

The fax functions for testing individual operations, such as below.

See *Page 3-36* for details of entering the test mode. To leave the test mode, press the *CLEAR* button.

### 6.1.1 Test mode overview

Test mode can be executed by following the menu items from the display.

#### a) DRAM tests

Writes data to DRAM image storage areas and reads that data to check operations.

#### b) Print test

Prints nine different patterns within the print area.

#### c) Modem, NCU tests

These tests comprise the frequency test ,the G3 signal transmission test, and the CNG and DTMF signals reception test, and V.34 G3 signal transmission test.

#### d) Faculty tests

These test check the operation of operation panel and sensor functions.

### 6.1.2 Test mode flowchart

TEST MODE

'＊' indicates that these items
are not used in the field.

```
├ [1] D-RAM                                    See Page 3-55
├ [2] CS


├ [3] PRINT ─────────── ＊[0] CG
                        ＊[1] WHITE
                        ─ [2] BLACK            See Page 3-56
                        ＊[3] STRIPES
                        ＊[4] CHECKERS
                        ＊[5] GRID
                        ─ [6] ENDURANCE        See Page 3-56
                        ＊[7] BLACK/WHITE
                        ＊[8] BIAS
                        ＊[9] FIXING PATTERN
                        ＊[＊] PRINTING AREA
                        ─ [#] CRG TEST


├ [4]  MODEM NCU ─────── ＊[1] RELAY
                        ─ [2] FREQ             See Page 3-57
                        ＊[3] Not used
                        ─ [4] G3 Tx            See Page 3-58
                        ＊[5] DTMF Tx TEST
                        ─ [6] TONE Rx          See Page 3-58
                        ＊[7] Not used
                        ─ [8] V.34 G3 Tx TEST  See Page 3-59
＊[5] AGING TEST
├ [6] FACULTY TEST ───── ＊[1] G3 4800bps Tx
                        ＊[2] REGISTRATION
                        ─ [3] SENSOR           See Page 3-60
                        ＊[4] ADF
                        ＊[5] Not used
                        ＊[6] SPEAKER
                        ─ [7] PANEL            See Page 3-62
                        ＊[8] Not used
                        ─ [9] LINE             See Page 3-64
＊[7] DATA SET
```

**Figure 3-18 Test Mode**

### 6.1.3 D-RAM tests

Pressing the *1* button from the test mode menu selects the D-RAM tests.  D-RAM Test 1 writes data to the entire D-RAM region and reads it out to check that operations are correct.  D-RAM Test 2 just reads data at high speed.

**Operating**

| 1:D-RAM        5824K |
|----------------------|
| ✴✴✴. . . .✴✴✴         |

5824K: D-RAM total memory capacity (bytes)

✴ : Indicates an address for which write testing is complete.
 . : Indicates an address for which read testing is complete.

Error

**Normal end**

| 1:D-RAM        5824K |
|----------------------|
| complete      (no error) |

**Error display**

| WRT= 33CC  RD= 3333 |
|---------------------|
| ADR= 2800 |

Restart by pressing START/COPY button.

**(Normal end)**

| 1:D-RAM        5824K |
|----------------------|
| complete      (no error) |

WRT : data written
RD :   data read
ADR :  address

**Figure 3-19 D-RAM Test**

### 6.1.4 Print

The Print Test menu is selected by pressing the *3* key from the test mode menu.  In this test, various print patterns are output from the printer.  As service print patterns, press *numeric* button 2 from the Print Test menu to select **"3-2: Black"** or press numeric button 6 to select **"3-6: Endurance"**.  Do not use the other patterns.  They are for development and factory use.

Check the following for the print pattern.



Check for image shrinking, stretching, soiling, and black stripes.
"3-6: ENDURANCE"

Check for white stripes and unevenness.
"3-2: BLACK"
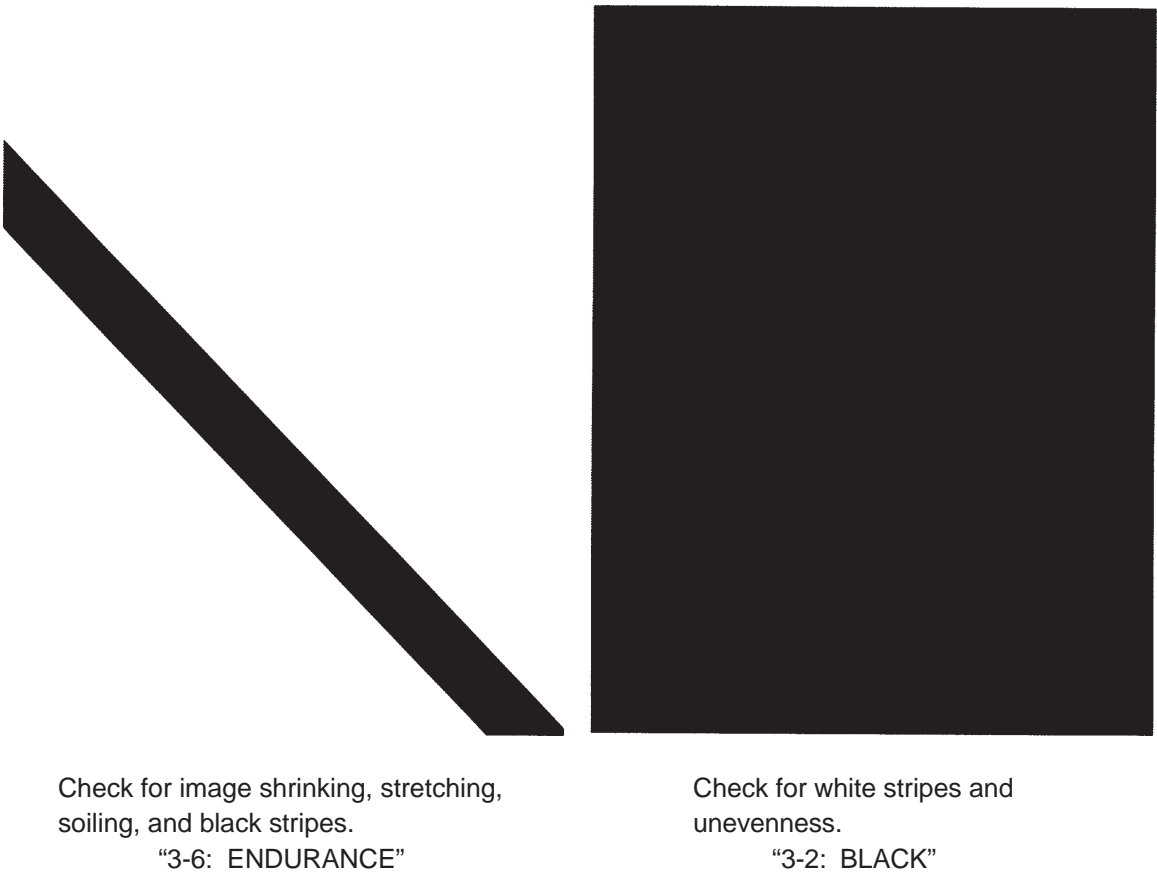
**Figure 3-20 Print Pattern Check**
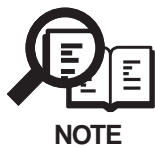
> **NOTE**
> After completion of the print test, if the printing was normal, copy a document.  If there is any defect in the copied image, there is a defect in the scan section.

### 6.1.5 Modem and NCU tests

These tests test modem and NCU transmission and reception.  The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem.  Also, on the display indicates whether or not the modem correctly detected received tone signals and DTMF signals.

End this test by pressing the *STOP* button.

| Modem test type | Overview |
| --- | --- |
| Frequency test | The modem sends tone signals from the modular jack and the speaker. |
| G3 signal transmission test | The modem sends G3 signals from the modular jack and the speaker. |
| Tonal signal reception tests | The modem detects specific frequencies and DTMF signals received from the modular jack. |
| V.34 G3 signal transmission test | The modem sends V.34 G3 signals from the modular jack and the speaker. |

#### a) Frequency test

The frequency test menu is selected by pressing numeric button 2 from the MODEM NCU test menu.  Signals of the frequencies below are sent from the modem using the modular jack and the speaker.  The frequency can be changed with the numeric buttons.

| Numeric button | Frequency |
| --- | --- |
| 1 | 462 Hz |
| 2 | 1100 Hz |
| 3 | 1300 Hz |
| 4 | 1500 Hz |
| 5 | 1650 Hz |
| 6 | 1850 Hz |
| 7 | 2100 Hz |

**NOTE**

The pseudo-ringback tone transmission pattern and frequency and the output levels for each frequency follow the service data transmission level settings.

**b) G3 signal transmission test**

The G3 signal transmission test menu is selected by pressing numeric button 4 from the MODEM NCU test menu. The G3 signals below are sent from the modem using the modular jack and the speaker. The frequency can be changed with the numeric buttons.

| Numeric button | Frequency |
|---|---|
| 0 | 300 bps |
| 1 | 2400 bps |
| 2 | 4800 bps |
| 3 | 7200 bps |
| 4 | 9600 bps |
| 5 | TC7200 bps |
| 6 | TC9600 bps |
| 7 | 12000 bps |
| 8 | 14400 bps |

**NOTE**

The transmission level can be changed with the *FUNCTION* button then *<* and *>* button.

**c) Tonal and DTMF signal reception test**

The tonal and DTMF signal reception test is selected by pressing the *6* button from the MODEM NCU test menu. This test checks whether the tonal signals and DTMF signals received from the modular jack are detected by the modem.

**Tonal signal reception test**

```
4 - 6 : TONE  Rx          0 0 0
```

```
0 0 0
      └── When 462±14 Hz signal detected, 0→1
    └──── When 1100±30 Hz signal detected, 0→1
  └────── When 2100±25 Hz signal detected, 0→1
```
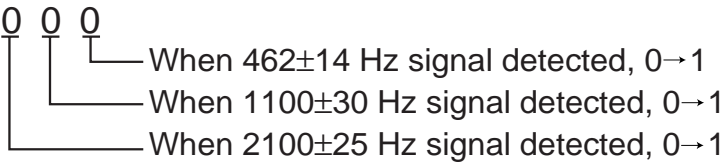
**DTMF signal reception test**

```
4 - 6 : TONE  Rx          0 0 0
                1 2 3 4 5 6 7 8 9 0
```

The received DTMF signals are displayed in order from the right on the second line of the display.

**Figure 3-21 Tonal and DTMF Signal Reception Test**

**3-58**

**d) V.34 G3 signal transmission test**

The V.34 G3 signal transmission test menu is selected by pressing numeric button 8 from the MODEM
NCU test menu.  The V.34 G3 signals below are sent from the modem using the modular jack and the
speaker by pressing the start key. The baud rate can be changed with the numeric button, and the Speed can
be changed with the search button.

| Numeric button | Baud rate |
|---|---|
| 0 | 3429 baud |
| 1 | 3200 baud |
| 2 | 3000 baud |
| 3 | 2800 baud |
| 4 | 2743 baud |
| 5 | 2400 baud |

| Search button | Speed |
|---|---|
| | 2400 bps |
| | 4800 bps |
| ∧ | 7200 bps |
| | 9600 bps |
| | 12000 bps |
| | 14400 bps |
| | 16800 bps |
| | 19200 bps |
| | 21600 bps |
| | 24000 bps |
| ∨ | 26400 bps |
| | 28800 bps |
| | 31200 bps |
| | 33600 bps |

The transion level for each frequency follows the service data.

**NOTE**

### 6.1.6 Faculty tests

The faculty tests are selected by pressing numeric button 6 from the test mode menu.  These tests check the following faculties of this fax.

| Test type | Overview |
| --- | --- |
| Sensor tests | Test whether the sensors are operating correctly. |
| Operation panel test | Tests whether the button switches on the control panel are operating correctly. |
| Line signal reception test | Tests whether the NCU board signal sensor and frequency counter are operating correctly. |

### a) Sensor tests

The sensor test is selected by pressing numeric button 3 from the faculty test menu.  This test checks the status of each sensor of this fax in item 1 on the display.

Sensors that use actuators and microswitches can be checked by moving the actuator or microswitch.

```
6-3 : SENSOR
[1] - - - [5]
```

Pressing the 1 key.

```
DS  of   DES  of   DOC A4
```

DS: Document sensor        DES: Document edge sensor
    on/of: document/no document
DOC: Document width sensor        A4 (This machine does not have this sensor.)

Pressing the 2 key.

```
ASF of      CPS on LTR
TN  on  XX     OFS of
```

ASF of    CPS on    LTR
— Cassete recording paper size
— Cassete recording paper size sensor: on/of
recording paper / no recording paper
— TRAY recording paper size sensor: on/of
recording paper / no recording paper

TN    on XX    OFS of
— Paper overflow sensor
— Toner presence and decimal
display of AD converter output
on: toner (620 or more than that)
of : no toner (less than 620)
— Toner sensor

Pressing the 3 key.

```
CAS  of
JAM  of
```

JAM: ON when the jam state exists before entering the test mode.
CAS: Cassete sensor

Pressing the 4 key.

```
0:01    1:00    2:00    3:00
5:02
```

Pressing the 5 key.

```
10:20
         31:4F     114:02
```

**Figure 3-22 Sensor Tests**

**b) Operation panel tests**

The operation panel test is selected by pressing numeric button 7 from the faculty test menu.  This test checks that the display, LED lamps, and buttons on the control  panel are operating correctly.

**b-1) Display test**

Pressing the *START/COPY* button from the control panel menu, "H" is displayed 20 characters by 2 line on the display.  The next time the *START/COPY* button is pressed, all the LCD dots on the display are displayed.  Check for any LCD dots in the display that are not displayed.

**b-2) LED lamp test**

The LED lamp test is selected by pressing the *START/COPY* button after the display test.
When the *START/COPY* button is pressed, ALARM lamp, In Use/Memory lamp on the control panel light.  Check for any LED that does not light during the test.

**b-3) Operation button test**

The Operation button test is selected by pressing the *START/COPY* button after the LED lamp test.
In this test, you press the button corresponding to the displayed character to put it out.  The table giving the correspondence between the characters and the buttons is below.

| Character | Operation button | Character | Operation button |
|---|---|---|---|
| 1-# | Numeric buttons | $ | Resolution button |
| P | R button | & | Receive mode button |
| R | Redial/Pause button | E | Set button |
| D | Coded dial/Directory button | O | Hook button |

When all the characters displayed have gone out, the system next starts the one-touch speed dialing button test.  The letters a-f are displayed on the display, corresponding to one-touch speed dialing buttons 01-32.  Each letter displayed on the display goes out when its corresponding one-touch speed dialing button is pressed.

In this test, check for operation buttons whose corresponding character or letter does not go out when the button is pressed.

```
┌─────────────────────────────┐
│ 6-7:OPERATION PANEL         │
│                             │
│                             │
└─────────────────────────────┘
```

⬇ Press Start key.

```
┌─────────────────────────────┐
│ HHHHHHHHHHHHHHHHHHHHH        │
│ HHHHHHHHHHHHHHHHHHHHH        │
└─────────────────────────────┘
```
H pattern displayed

⬇ Press Start key.

```
┌─────────────────────────────┐
│ ■■■■■■■■■■■■■■■■■■■■          │
│ ■■■■■■■■■■■■■■■■■■■■          │
└─────────────────────────────┘
```
All LCD dots displayed

⬇ Press Start key.

```
┌─────────────────────────────┐
│ 6-7:OPERATION PANEL         │
│   LED TEST                  │
└─────────────────────────────┘
```
All LED lamps light up.

⬇ Press Start key.

```
┌─────────────────────────────┐
│ 1 2 3 4 5 6 7 8 9 * 0 #   P R E │
│   O D                   $   &   │
└─────────────────────────────┘
```
When a key is pressed, the corresponding character goes out.

⬇ When the entire display has gone out

```
┌─────────────────────────────┐
│ a b c d e f g h i j k l m n o p q r s t │
│ u v w x                     │
└─────────────────────────────┘
```
When a one-touch speed dialing key is pressed, the corresponding letter goes out.

⬇ When the entire display has gone out.

```
┌─────────────────────────────┐
│                             │
│          O K                │
│                             │
└─────────────────────────────┘
```

Press the Stop key to end the test.

**Figure 3-23 Operation Panel**

### c) Line signal reception test

The line detect test menu is selected by pressing numeric button 9 from the faculty test menu.  This test checks the operation of the NCU signal sensor and frequency counter.  In Menu 1, the CI, status can be detected and in Menu 2 the frequency can be detected at changing detection levels.  In this way, you can check if the NCU board is correctly detecting signals.

### c-1) Test Menu 1

Test Menu 1 is selected by pressing numeric button 1 from the Line Detect menu.  When CI,  is detected from the modular jack, the display changes from OFF to ON and the received frequency is displayed.

### c-2) Test Menu 2

Not used

### c-3) Test Menu 3

Test Menu 3 is selected by pressing numeric button 3 from the Line Detect menu.  When CNG is detected from the modular jack, the display changes from OFF to ON.

# 7. SERVICE REPORT

## 7.1 Report Output Function

### 7.1.1 User report output functions

The fax can output user reports manually, and some reports can be output automatically using the to user data settings.

**a) Manual output of reports**

| Report type | Operations |
|---|---|
| Activity Report | After pressing the *Report* button, use the ∧ or ∨ button to select **ACTIVITY REPORT**. After pressing the *Set* button. |
| User's Data List | After pressing the *Report* button, use the ∧ or ∨ button to select **USER DATA LIST**. After pressing the *Set* button. |
| Speed Dialing Lists<br>1-touch dial list<br>Coded speed dial list<br>1-touch (Detail)<br>Coded (Detail)<br>Group dial list | Press the *Report* button, then use the ∧ or ∨ button to select **SPEED DIAL LIST**. After pressing the *Set* button, then use the N or M button to select List. After pressing the *Set* button. |
| Document Memory List | After pressing the *Report* button, then use the ∧ or ∨ button to select **DOC. MEMORY LIST**. After pressing the *Set* button. |

**b) Reports which can be output automatically using user data and PC settings**

Each report written below can be automatically output by specifying **"REPORT SETTING"** in user data.

Transmission report
Reception report

---

**NOTE**

**ROM Version display**

The ROM version is printed on the top left hand side of the User's data list.  Please refer to this when troubleshooting.

example:

EC-XX-XX

└──────── MAIN ROM version

---

**c) Reports output automatically**

**Memory clear list**

The fax automatically outputs a memory clear list when the power is turned on after a power cut.

```
25/09/1999 09:39 FAX                                                    001

                      ********************************
                      ***    MEMORY CLEAR REPORT    ***
                      ********************************

                            MEMORY FILES DELETED
```

| TX/RX NO | MODE | CONNECTION TEL/ID | PGS. | SET TIME | ST. TIME |
|----------|------|-------------------|------|----------|----------|
| 0002 | DELAYED TX | 1234567890 | 1 | 09/25 17:34 | 08:00 |
| 0003 | B'CAST | [  01] | 1 | 09/25 17:46 | |
| | | [  02] | | | |

**Figure 3-24 Memory Clear List**

TX/RX NO              : Indicates four digits of the transaction number
MODE                 : Indicates, **TRANSMISSION**, or **MEMORY RX**.
CONNECTION TEL       : Number sent from the other party or number dialled
PAGES                : Number of pages stored in memory
SET TIME             : Time when data was stored in memory
START TIME           : Planned transmission start time (24-hour display)

### 7.1.2 Service report output functions

The fax outputs current service data settings, and past communications history reports.

#### a) List of service reports

The fax outputs the service reports shown below.

| Report type | Operations |
| --- | --- |
| 1. Service & System list<br>2. System data list<br>3. System dump list | In the service mode, pressing the Report button, then use the ∧ or ∨ button to select list. |
| Service activity report<br>(with service error code<br>and dump list) | If you set bits 0 and 1 of **#1 SSSW SW01** in the service mode, the service error code and dump list are indicated on the activity report (sending/receiving). |

### a-1) System data list

This list shows the current settings service data #1~#5, #7 and #9.

```
25/09/1999 16:48 FAX                                           ☑004
          SW11              -----         00000000
          SW12              -----         00000000
          SW13              -----         00000000
          SW14              -----         00000000
          SW15              -----         00000000
          SW16              -----         00110000
          SW17              -----         00000000
```

```
  25/09/1999 16:47 FAX                                          ☑003
              5.BUSY TONE 1              -----      10000000
                 01 :              -----            500
                 02 :              -----            18
                 03 :              -----            60
                 04 :              -----            18
                 05 :              -----            60
                 06 :              -----            12
                 07 :              -----            3
                 08 :              -----            3
```

```
  25/09/1999 16:47 FAX                                          ☑002
              11:              -----         3500
              13:              -----         1320
              15:              -----         120
              16:              -----         4
              17:              -----         100
              18:              -----         0
              19:              -----         200
              20:              -----         100
              21:              -----         0
              22:              -----         200
```

```
25/09/1999 16:46 FAX                                           ☑001

                    *****************************
                    ***   SYSTEM DATA LIST   ***
                    *****************************

              #1 SSSW

                 SW01              -----         00000000
                 SW02              -----         00000000
                 SW03              -----         00000000
                 SW04              -----         10000000
                 SW05              -----         00000000
                 SW06              -----         10010000
                 SW07              -----         00000000
                 SW08              -----         00000000
                 SW09              -----         00000000
                 SW10              -----         00000000
                 SW11              -----         00000000
                 SW12              -----         00000010
                 SW13              -----         00000000
                 SW14              -----         00000000
                 SW15              -----         00000000
                 SW16              -----         00000011
                 SW17              -----         00000000
                 SW18              -----         00000000
                 SW19              -----         00000000
                 SW20              -----         00000000
                 SW21              -----         00000000
                 SW22              -----         00000000
                 SW23              -----         00000000
                 SW24              -----         00000000
                 SW25              -----         00000000
                 SW26              -----         00000000
                 SW27              -----         00000000
                 SW28              -----         00000000
                 SW29              -----         00000000
                 SW30              -----         00000000

              #2 MENU

                 05:              -----            OFF
                 06:              -----            DIAL
                 07:              -----            10
                 08:              -----            3429
                 09:              -----            33.6
                 10:              -----            25Hz

              #3 NUMERIC Param.

                 02:              -----            10
                 03:              -----            15
                 04:              -----            12
                 05:              -----            4
                 06:              -----            4
                 09:              -----            6
                 10:              -----            5500
```

**Figure 3-25 System Data List (page 1 ~ page 4)**

```
25/09/1999 16:48 FAX                                                              ☑006
              01 :              -----           14
              02 :              -----            0
              03 :              -----            0
```

```
25/09/1999 16:48 FAX                                                         ☑005
              41 :              -----            0
              42 :              -----            0
              43 :              -----            0
              44 :              -----            0
              45 :              -----            0
              46 :              -----            0
              47 :              -----           10
              48 :              -----           50
              49 :              -----            0
              50 :              -----            0

           11.RKEY
              01 :              -----            0
              02 :              -----            0
              03 :              -----            0

           12.PBX DIAL TONE                 00000000
              01 :              -----          350
              02 :              -----           90
              03 :              -----           10
              04 :              -----            0
              05 :              -----            0
              06 :              -----            0
              07 :              -----            5
              08 :              -----            0

           13.PBX BUSY TONE                 00000000
              01 :              -----         1000
              02 :              -----           40
              03 :              -----           60
              04 :              -----           40
              05 :              -----           60
              06 :              -----            1
              07 :              -----            5
              08 :              -----            3
```

**Figure 3-26 System Data List (page 5, page 6)**

**NOTE**

**"START DATE"** records the date when the fax performs its first operation, after shipment from the factory.

### a-2) System dump list

```
25/09/1999 10:28 FAX                                                    ☑001


     CLEAR DATE              25/09/1999

     TX    =    6
     A4    =    1    B4    =    0    A3    =    0
     RX    =    2
     A4    =    1    B4    =    0    A3    =    0    LTR    =    0    LGL    =    0
     33600 =    0    31200 =    0    28800 =    0    26400 =    0    24000 =    0
     21600 =    0    19200 =    0    16800 =    0    14400 =    0    12000 =    0
     9600  =    0    7200  =    0    4800  =    0    2400  =    0
     14400 =    2    12000 =    0    TC9600=    0    TC7200=    0
     14400 =    0    12000 =    0
     9600  =    0    7200  =    0    4800  =    0    2400  =    0
     STD   =    2    FINE  =    0    SUPER =    0    ULTRA =    0
     MH    =    0    MR    =    0    MMR   =    0    JBIG  =    2
     G3    =    0    ECM   =    2
     PRINT =   23 /   23            READ  =    5 /    5


   #000           0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    1    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    1    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0    0    0

  ##100           0    0    0    0    0    0    1    0
                  0    0    0    0    0    0    0    0
                  0

  ##200           0    0    0    0    0    0

  ##220           0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0    0
                  0    0    0    0

  ##280           0    0    0    0    0    0    0    0
                  0    0    0    0    0    0    0

  ##670           0    0    0    0    0    0

  ##750           0    0    0    0
                  0    0
```

**Figure 3-27 System Dump List (1/2)**

| | |
|---|---|
| CLEAR DATE | : Date on which data was initialized using service data **#8 CLEAR, ALL** |
| RX/TX | : Total number of pages received/transmitted |
| A4/B4/A3/LTR/LGL | : Total number of pages transmitted and received for each document size |
| 33600 bps~2400 bps | : Total number of pages transmitted and received for each modem speed |
| STD/FINE/SUPER/ULTRA | : Total number of pages transmitted and received for each mode |
| MH/MR/MMR/JBIG | : Total number of pages transmitted and received for each coding method |
| G3/ECM | : Total number of pages transmitted and received in each mode |
| PRINT/READ | : Total number of pages printed/scanned |

[Display example]

PRINT = 30*/100**    READ = 30*/100**

\* Indicates the value input with Service Data **#8 CLEAR, COUNTER**.

\*\* Indicates the value counted since shipment from the factory.


#000~##750

[Display example]    : Total number of occurrences for each error code

| ##280 | 1 | 7 | 3 | 0 | 0 |
|---|---|---|---|---|---|
| | ##280 | ##281 | ##282 | | |
| | errors | errors | errors | | |

```
   25/09/1999 13:15 FAX 0123456789        Canon Inc.                          002

       ##750              0       0       0       0       0       0       0       0
                          0       0       0       0       0       0       0       0
                          0       0       0       0       0       0       0       0
                          0       0       0       0       0       0       0       0
                          0       0       0       0       0       0       0       0
                          0       0       0       0       0       0       0       0
                          0       0


   #1 LATEST                         ##106

          START TIME                25/09 11:37
          OTHER PARTY                       3362+3362
          MAKER CODE                10001000
          MACHINE CODE              01011101 00000000
          RCV V.8 FRAME             E0 81 85 D4 90 7E 00 00
          SYMBOL RATE               3429
          DATA RATE                 31.2
          TX LVL REDUCTION           0
          ERR ABCODE                00
          ERR SECTXB                80
          ERR SECRXB                80


          Rx : (bit 1) 00000000 01000010 00011111 00100010 00000000 00000000 00000000 (bit56)
          Tx : (bit 1) 00000100 01110111 00010101 00100011 00000001 00000001 00000001 (bit56)
               (bit57) 00000001 00011001 00000100 00000000 00000000                   (bit96)

      Rx :            NSS TS1 DCS      PIX-312
      Tx : NSF CSI DIS              CFR          DCN


                          ##102
```

**Figure 3-28 System Dump List (2/2)**

| | |
|---|---|
| ##nnn | : Service error code |
| START TIME | : Communication start date and time (on 24 hour clock) |
| OTHER PARTY | : Telephone number sent from other party |
| MAKER CODE | : Maker code |
| | (For details, *see Chapter 4: 3. MAKER-CODE on page 4-5*) |
| | [1000    1000]   Indicates a Canon fax |
| | └─── lower nibble |
| | └──── upper nibble |
| RCV V.8 FRAME | : Received V.8 protocol signal |
| SYMBOL RATE | : Symbol rate used for the primary channel |
| TX LVL REDUCTION | : 0 (Fixed) |
| ERR ABCODE | : Code output by the modem when an error occurred (Not used in the field) |
| ERR SECTXB | : Transmit status of the modem when an error occurred (Not used in the field) |
| ERR SECRXB | : Received status of the modem when an error occurred (Not used in the field) |
| RX/TX | : Received/transmitted protocol signal |
| | bit 1 to bit 96 of received/transmitted DIS, DCS, or DTS |

**NOTE**
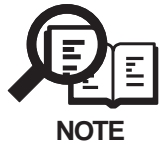
If no service errors have occurred in the past, the above report will not be output.

**a-3) Service activity report (sending/receiving)**

```
25/09/1999 12:54 FAX +3364 3364                                    ☒001

                      ****************************
                      ***   ERROR TX REPORT   ***
                      ****************************


            TX FUNCTION WAS NOT COMPLETED

            TX/RX NO                0035
            CONNECTION TEL                      3361
            CONNECTION ID           AA
            ST. TIME                06/17 12:54
            USAGE T                 00'22
            PGS. SENT               0
            RESULT                  NG        ##755

      START TIME              25/09 12:54
      OTHER PARTY                        3361
      MAKER CODE              10001000
      MACHINE CODE            10101010 00000000
      RCV V.8 FRAME           E0 81 85 D4 90 7E 00 00
      SYMBOL RATE             3429
      DATA RATE               28.8
```

**Figure 3-29 Service Error Tx Report**

| | |
|---|---|
| Header | : OK, NG messages |
| TX/RX NO | : Indicates four digits of the transaction number |
| CONNECTION TEL (OTHER PARTY) | : Number sent from the other party or number dialled (lower 20 digits) |
| SUBADDRESS | : Subaddress number sent from the other party |
| CONNECTION ID | : ID sent from the other party, if the other party is a Canon fax |
| START TIME | : Communication start date and time (on 24-hour display) |
| USAGE TIME | : Communication time (in minutes and seconds) |
| PAGES | : Number of pages for which transmission was complete (For details, *see User's manual*) |
| RESULT | : **"NG"** display with number of pages for which transmission was fault, and service error code |
| MAKER CODE | : Maker code (For details, *see Chapter 4: 3. MAKER-CODE on page 4-5*) |

[1000    1000]   Indicates a Canon fax
                  └── lower nibble
              └──── upper nibble

| | |
|---|---|
| RCV V.8 FRAME | : Received V.8 protocol signal |
| SYMBOL RATE | : Symbol rate used for the primary channel |
| TX LVL REDUCTION | : 0 (Fixed) |
| ERR ABCODE | : Code output by the modem when an error occurred (Not used in the field) |
| ERR SECTXB | : Transmit status of the modem when an error occurred (Not used in the field) |
| ERR SECRXB | : Received status of the modem when an error occurred (Not used in the field) |
| RX/TX | : Received/transmitted protocol signal bit 1 to bit 96 of received/transmitted DIS, DCS, or DTS |

**NOTE**

The V.8/V.34-related items (RCV V.8 FRAME to ERR SECRXB) are not printed on the Normal G3 Service Activity Report.

```
25/09/1999 12:58 FAX +3364 3364                              ☑001

       ┌─────────────────────────────────────────────────────┐
       │                                                       │
       │              *******************                      │
       │              ***   RX REPORT   ***                    │
       │              *******************                      │
       │                                                       │
       │                                                       │
       │         INCOMPLETE RECEPTION                          │
       │                                                       │
       │         TX/RX NO              5028                     │
       │         CONNECTION TEL             +3363 3363          │
       │         CONNECTION ID                                 │
       │         ST. TIME             06/17 12:57              │
       │         USAGE T              00'23                    │
       │         PGS.                 2                        │
       │         RESULT               NG          ##201        │
       │                                                       │
       └─────────────────────────────────────────────────────┘
            START TIME           25/09 12:57
            OTHER PARTY             +3363 3363
            MAKER CODE           10001000
            MACHINE CODE         00010110 00000000
            RCV V.8 FRAME        E0 81 85 D4 90 7E 00 00
            SYMBOL RATE          3429
            DATA RATE            33.6
                        _____TION
```
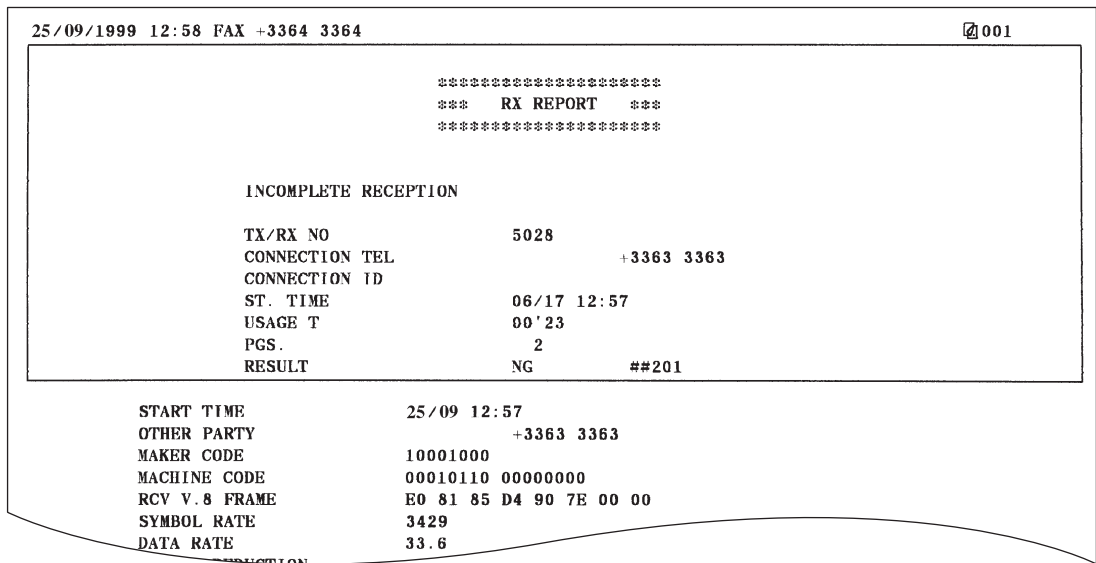
**Figure 3-30 Service Error Activity Report (receiving)**

| | | |
|---|---|---|
| Header | : | OK, NG messages |
| TX/RX NO | : | Indicates four digits of the transaction number |
| CONNECTION TEL (OTHER PARTY) | : | Number sent from the other party or number dialled (lower 20 digits) |
| SUBADDRESS | : | Subaddress number sent from the other party |
| CONNECTION ID | : | ID sent from the other party, if the other party is a Canon fax |
| START TIME | : | Communication start date time (on 24-hour display) |
| USAGE TIME | : | Communication time (in minutes and seconds) |
| PAGES | : | Number of pages for which transmission was complete (For details, *see User's manual*) |
| RESULT | : | **"NG"** display with number of pages for which transmission was fault, and service error code |
| MAKER CODE | : | Maker code (For details, *see Chapter 4: 3. MAKER-CODE on page 4-5*) |

[1000    1000]    Indicates a Canon fax
└──────── lower nibble
└──────── upper nibble

| | | |
|---|---|---|
| RCV V.8 FRAME | : | Received V.8 protocol signal |
| SYMBOL RATE | : | Symbol rate used for the primary channel |
| DATA RATE | : | Transmission speed used for the primary channel |
| TX LVL REDUCTION | : | 0 (Fixed) |
| ERR ABCODE | : | Code output by the modem when an error occurred (Not used in the field) |
| ERR SECTXB | : | Transmit status of the modem when an error occurred (Not used in the field) |
| ERR SECRXB | : | Receive status of the modem when an error occurred (Not used in the field) |
| RX/TX | : | Received/transmitted protocol signal bit 1 to bit 96 of received/transmitted DIS, DCS, or DTS |

The V.8/V.34-related items (RCV V.8 FRAME to ERR SECRXB) are not printed on the Normal G3 Service Activity Report.

**NOTE**

# 8. WIRING DIAGRAM

## 8.1 Wiring Diagram



**Figure 3-31 Wiring Diagram**

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### 8.2 Connector Locations and Signal Descriptions
**SCNT board (J1) ← → Contact sensor**

| J1 | | sensor | Signal name | Description |
|---|---|---|---|---|
| 1 | ← | 1 | VOUT | Analog image data |
| 2 | — | 2 | AGND | Analog ground |
| 2 | — | 3 | AGND | Analog ground |
| 3 | → | 4 | +5VA | Logic drive voltage |
| 4 | → | 5 | VREF | Image signal reference voltage |
| 5 | → | 6 | SH | Image scan start signal |
| 6 | → | 7 | CLK | Contact sensor drive clock |
| 7 | → | 8 | VLED | LED drive voltage |
| 8 | — | 9 | GND | Frame ground |
| 8 | — | 10 | GND | LED ground |
| 9 | — | 11 | LGND | Frame ground |
| 9 | — | 12 | LGND | Frame ground |

**SCNT board (J2)   ← →   Power supply unit (J201)**

| J2 | | J201 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 16 | GND | Ground |
| 2 | — | 15 | GND | Ground |
| 3 | ← | 14 | +3.3V | Logic drive voltage |
| 4 | — | 13 | GND | Ground |
| 5 | ← | 12 | +5V | Logic drive voltage |
| 6 | ← | 11 | +5V | Logic drive voltage |
| 7 | — | 10 | GND | Ground |
| 8 | ← | 9 | +12V | Logic drive voltage |
| 9 | — | 8 | GND | Ground |
| 10 | — | 7 | GND | Ground |
| 11 | — | 6 | GND | Ground |
| 12 | — | 5 | GND | Ground |
| 13 | ← | 4 | +12V | Motor drive voltage |
| 14 | ← | 3 | +12V | Motor drive voltage |
| 15 | ← | 2 | +12V | Motor drive voltage |
| 16 | ← | 1 | +12V | Motor drive voltage |

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**SCNT board (J3)**  ←→  **PCNT board (J1)**

| J3 | | J1 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 1 | GND | Ground |
| 2 | → | 2 | RLYD | Relay control signal |
| 3 | → | 3 | FSRD | Fixing heater control signal |
| 4 | → | 4 | DVFOT | Developing AC bias drive signal |
| 5 | → | 5 | TRCRNT | Transfer voltage feedback signal |
| 6 | → | 6 | TRPWM | Transfer positive voltage drive signal |
| 7 | → | 7 | TRNFOT | Transfer negative voltage drive signal |
| 8 | → | 8 | PRACC | Primary high-voltage (AC) drive signal |
| 9 | → | 9 | PRDCC | Primary high-voltage (DC) drive signal |
| 10 | → | 10 | DVDCC | Developing DC bias drive signal |
| 11 | ← | 11 | POSNS | Paper detection signal |
| 12 | ← | 12 | FSRTH | Fixing heater temperature detect signal |
| 13 | → | 13 | +5V | Logic drive voltage |
| 14 | → | 14 | +5V | Logic drive voltage |
| 15 | — | 15 | GND5 | Ground |
| 16 | → | 16 | +12R | Relay drive voltage |
| 17 | — | 17 | GND12 | Ground |
| 18 | — | 18 | GND12 | Ground |
| 19 | → | 19 | +12HB | High voltage circuit drive voltage |

**SCNT board (J4)**  ←→  **Overflow sensor**

| J4 | | overflow | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | +5V | Overflow sensor drive voltage |
| 2 | — | — | GND | Ground |
| 3 | ← | — | OVERFLOW | Overflow sensor detection signal |

**SCNT board (J7)**  ←→  **Speaker**

| J7 | | speaker | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | VO2 | Speaker drive |
| 2 | → | — | VO1 | Speaker drive |

**SCNT board (J8)**  ←→  **Paper sensor**

| J8 | | PS | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | +5V | Paper sensor drive voltage |
| 2 | — | — | GND | Ground |
| 3 | ← | — | CPAPER | Cassette Paper detection signal |

**SCNT board (J10)**  ←→  **Cassette detection sensor**

| J10 | | Cassette | Signal name | Description |
|---|---|---|---|---|
| 1 | ← | — | CAS | Cassette detection signal |
| 2 | — | — | GND | Ground |

**SCNT board (J403)** ← → **NCU board (J2)**

| J403 | | J2 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 6 | AGND | Ground |
| 2 | → | 5 | +5V | Not used |
| 3 | → | 4 | +12V | Analog device, Relay drive voltage |
| 4 | — | 3 | AIN | Line monitor signal |
| 5 | → | 2 | TX | Telephone line transmission signal |
| 6 | ← | 1 | RX | Telephone line reception signal |

**SCNT board (J404)** ← → **NCU board (J1)**

| J404 | | J1 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 23 | DGND | Ground |
| 2 | ← | 22 | BIT3 | for future use |
| 3 | ← | 21 | BIT2 | for future use |
| 4 | ← | 20 | BIT1 | for future use |
| 5 | — | 19 | LPL2 | Not used |
| 6 | — | 18 | LPL1 | Not used |
| 7 | — | 17 | HOOK2 | Not used |
| 8 | ← | 16 | HOOK1 | Telephone off hook detection signal |
| 9 | ← | 15 | CIOR | CI signal 1 (CI1 or CI2) |
| 10 | ← | 14 | CI2 | CI detection signal 2 |
| 11 | ← | 13 | CI1 | CI detection signal 1 |
| 12 | — | 12 | LPRD | Not used |
| 13 | → | 11 | DCRD | DC relay control signal |
| 14 | → | 10 | CMLD | CML relay control signal |
| 15 | → | 9 | HRD | H relay control signal |
| 16 | → | 8 | PRD | P relay control signal |
| 17 | → | 7 | SRD | S relay control signal |
| 18 | — | 6 | AGND | Ground |
| 19 | — | 5 | N.C. | Not used |
| 20 | → | 4 | +12V | +12V |
| 21 | → | 3 | +3.3V | Logic drive signal (for ESS) |
| 22 | → | 2 | +3.3V | Logic drive signal |
| 23 | — | 1 | DGND | Ground |

**SCNT board (J405)** ← → **NCU board (J6)**

| J405 | | J6 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 14 | OUT | Direct current of line detection signal |
| 2 | → | 13 | IPSEL1 | HIC terminal impedance setting |
| 3 | → | 12 | IPSEL2 | HIC terminal impedance setting |
| 4 | — | 11 | IPSEL3 | HIC terminal impedance setting |
| 5 | → | 10 | DCSEL | DC registance switching when line is connected |
| 6 | ← | 9 | DCLIM | DC current limitation control signal |
| 7 | ← | 8 | RRD | R relay control signal |
| 8 | ← | 7 | NOR | CI reception sensitivity setting signal when no ringing reception |
| 9 | ← | 6 | C1 | DC cut capacitor selection signal |
| 10 | ← | 5 | C2 | DC cut capacitor selection signal |
| 11 | ← | 4 | CIST1 | CI reception sensitivity setting signal |
| 12 | ← | 3 | CIST2 | CI reception sensitivity setting signal |
| 13 | ← | 2 | AST | For Australian regulations signal |
| 14 | ← | 1 | NZ | For N.Z. regulations signal |

**SCNT board (J406)** ← → **Document feed motor / OPCNT board (J1)**

| J406 | | motor/J1 | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | RA | Phase A |
| 2 | → | — | RA* | Phase -A |
| 3 | → | — | RB | Phase B |
| 4 | → | — | RB* | Phase -B |
| 5 | → | 6 | +5V | Logic drive voltage |
| 6 | → | 5 | KIN | Status signal for keys, and sensors |
| 7 | → | 4 | XRST | Reset signal |
| 8 | ← | 3 | KOUT | Control signal for LEDs, display |
| 9 | — | 2 | GND | Ground |
| 10 | → | 1 | KCLK | Clock signal |

**SCNT board (J501)** ← → **MCNT board (J502)**

| J501 | | J502 | Signal name | Description |
|---|---|---|---|---|
| 1 | → | 21 | A* | Phase -A |
| 2 | → | 20 | A | Phase A |
| 3 | ← | 19 | FSRTH | Fixing heater temperature detection signal |
| 4 | → | 18 | APUD | ASF Pickup solenoid drive signal |
| 5 | ← | 17 | PISNS | Paper edge sensor detection signal |
| 6 | → | 16 | CPUD | Cassette pickup solenoid control signal |
| 7 | → | 15 | +5VA | Logic drive voltage |
| 8 | → | 14 | +5VA | Logic drive voltage |
| 9 | → | 13 | B | Phase B |
| 10 | ← | 12 | APAPER | ASF paper detection signal |
| 11 | → | 11 | B* | Phase -B |
| 12 | — | 10 | GND5 | Ground |
| 13 | — | 9 | GND5 | Ground |
| 14 | ← | 8 | TONOR | Toner detection signal |
| 15 | → | 7 | +12M | Main motor drive voltage |
| 16 | → | 6 | +5VB | Logic drive voltage |
| 17 | → | 5 | +12M | Main motor drive voltage |
| 18 | → | 4 | +12R | Front cover/cartridge sensor and solenoid drive voltage |
| 19 | — | 3 | GND12A | Ground |
| 20 | — | 2 | GND12A | Ground |
| 21 | ← | 1 | +12HA | +12V after front cover/cartridge sensor |

**SCNT board (J502)** ← → **Laser scanner**

| J502 | | scanner | Signal name | Description |
|---|---|---|---|---|
| 1 | → | 6 | +5V | Logic drive voltage |
| 2 | → | 5 | APCSH | APC sample hold signal |
| 3 | → | 4 | LON* | Laser on signal |
| 4 | — | 3 | GND | Ground |
| 5 | → | 2 | VDOUT* | Laser drive signal |
| 6 | ← | 1 | BDI* | Horizontal sync signal |
| 7 | → | 5 | +12V | Scanner motor drive voltage |
| 8 | ← | 4 | SCNTAC | Scanner rotation rate monitor signal |
| 9 | — | 3 | GND12 | Ground |
| 10 | → | 2 | SCNON* | Scanner motor drive signal |
| 11 | → | 1 | SCNCLK | Scanner reference clock signal |

**PCNT board (J2)** ← → **Fixing ass'y**

| J2 | | fixing | Signal name | Description |
|---|---|---|---|---|
| 1 | → | 1 | AC-H | AC 120V household current |
| 2 | → | 2 | AC-N | AC 120V household current |

**MCNT board (J501)** ← → **pickup solenoid**

| J501 | | solenoid | Signal name | Description |
|---|---|---|---|---|
| 1 | ← | — | CPUD | Pickup solenoid drive signal |
| 2 | → | — | +12V | Pickup solenoid drive voltage |

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**MCNT board (J503)**← → **Front cover/cartridge sensor**

| J503 | | FS/CS | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | +12VHA | After front cover/cartridge sensor |
| 2 | — | — | GND | Ground |
| 3 | → | — | +12R | Before front cover/cartridge sensor |

**MCNT board (J504)**← → **ASF sensor**

| J504 | | ASF | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | APAPER | ASF paper detection sensor drive voltage |
| 2 | — | — | GND | Ground |
| 3 | ← | — | POW1 | ASF paper detection signal |

**MCNT board (J505)**← → **Tonor sensor**

| J505 | | Tonor | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | GND | Ground |
| 2 | ← | — | TONOR | Remaining tonor detection signal |
| 3 | → | — | +5V | Tonor sensor drive voltage |

**MCNT board (J507)**← → **Main motor/Paper edge sensor/Fixing ass'y**

| J507 | | motor | Signal name | Description |
|---|---|---|---|---|
| 1 | → | — | WA | Phase A |
| 2 | → | — | WA* | Phase -A |
| 3 | → | — | WB | Phase B |
| 4 | → | — | WB* | Phase -B |
| 5 | → | — | POW2 | Paper pickup detection sensor drive voltage |
| 6 | — | — | GND | Ground |
| 7 | ← | — | PISNS | Paper pickup detection signal |
| 8 | ← | — | FSRTH | Fixing heater temperature detection signal |
| 9 | — | — | GND | Ground |

**MCNT board (J508)**← → **Pickup solenoid**

| J508 | | solenoid | Signal name | Description |
|---|---|---|---|---|
| 1 | ← | — | APUD | ASF Pickup solenoid drive signal |
| 2 | → | — | +12V | Pickup solenoid drive voltage |

**NCU board (J4)**   ←→ **Power Supply unit (J203)**

| J4 | | J203 | Signal name | Description |
|---|---|---|---|---|
| 1 | ← | 2 | VH | For telephone offhook detection during communication |
| 2 | — | 1 | VH-GND | Ground |

**NCU board (J5)**   ←→ **to Grounding wire**

| J5 | | G.wire | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | ARG | Ground (arrester) |

**NCU board (J7)**   ←→ **Modular board (J230)**

| J7 | | J230 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 1 | T2 | Line from L1, L2 to wall socket via the fax |
| 2 | — | 2 | W | Line from handset terminal T11 in priority mode (handset/extension telephone).  Goes into T21 of the extension telephone. |
| 3 | — | 3 | L2 | Telephone line |
| 4 | — | 4 | L1 | Telephone line |
| 5 | — | 5 | R | Earth signal for PBX |
| 6 | — | 6 | T1 | Line from L1, L2 to wall socket via the fax |

**NCU board (J8)**   ←→ **Modular board (J231)**

| J8 | | J231 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 9 | A | Line from handset terminal T12 in priority mode (handset/extension telephone).  Goes into T22 of the extension telephone. |
| 2 | — | 8 | W | Line from handset terminal T11 in priority mode (handset/extension telephone).  Goes into T21 of the extension telephone. |
| 3 | — | 7 | T12 | Handset terminal telephone line via the fax |
| 4 | — | 6 | T11 | Handset terminal telephone line via the fax |
| 5 | — | 5 | R | Earth signal for PBX |

**NCU board (J9)**   ←→ **Modular board (J231)**

| J9 | | J231 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 4 | W | Line from handset terminal T11 in priority mode (handset/extension telephone).  Goes into T21 of the extension telephone. |
| 2 | — | 3 | T22 | Extension telephone terminal telephone line via the fax. |
| 3 | — | 2 | T21 | Extension telephone terminal telephone line via the fax. |
| 4 | — | 1 | R | Earth signal for PBX |

**Power supply unit (J102) ← → PCNT board (TB1)**

| J102 | | TB1 | Signal name | Description |
|---|---|---|---|---|
| 1 | → | 2 | AC-N | 230V household current |
| 2 | → | 1 | AC-H | 230V household current |

**Modular board (J1) ← → Line**

| J1 | | Line | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | T2 | Not used |
| 2 | — | — | W | Not used |
| 3 | — | — | L2 | Telephone line |
| 4 | — | — | L1 | Telephone line |
| 5 | — | — | R | Not used |
| 6 | — | — | T1 | Not used |

**Modular board (J2) ← → extension telephone**

| J2 | | EXT.Tel | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | — | Not used |
| 2 | — | — | W | Not used |
| 3 | — | — | T2 | Extension telephone terminal telephone line via the fax |
| 4 | — | — | T1 | Extension telephone terminal telephone line via the fax |
| 5 | — | — | R | Not used |
| 6 | — | — | — | Not used |

**Modular board (J3) ← → handset**

| J3 | | handset | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | A | Not used |
| 2 | — | — | W | Not used |
| 3 | — | — | T2 | Handset terminal telephone line via the fax |
| 4 | — | — | T1 | Handset terminal telephone line via the fax |
| 5 | — | — | R | Not used |
| 6 | — | — | — | Not used |

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**SCNT board (J9)**    ← → **INTERFACE board (J4)**

| J9 | | J4 | Signal name | Description |
|---|---|---|---|---|
| 1 | — | 20 | GND | Ground |
| 2 | — | 19 | GND | Ground |
| 3 | ← | 18 | HSELIN | Host drive signal |
| 4 | ← | 17 | HSTB | Host drive signal |
| 5 | → | 16 | +5V | Peripheral power |
| 6 | — | 15 | HPD0 | Data bus |
| 7 | → | 14 | HXFALT | Peripheral drive signal |
| 8 | — | 13 | HPD1 | Data bus |
| 9 | ← | 12 | HAUTOFD | Host drive signal |
| 10 | — | 11 | HPD2 | Data bus |
| 11 | ← | 10 | HINIT | Host drive signal |
| 12 | — | 9 | HPD3 | Data bus |
| 13 | → | 8 | HSELECT | Peripheral drive signal |
| 14 | — | 7 | HPD4 | Data bus |
| 15 | → | 6 | HERROR | Peripheral drive signal |
| 16 | — | 5 | HPD5 | Data bus |
| 17 | → | 4 | HBUSY | Peripheral drive signal |
| 18 | — | 3 | HPD6 | Data bus |
| 19 | → | 2 | HXACK | Peripheral drive signal |
| 20 | — | 1 | HPD7 | Data bus |

**INTERFACE board (J2)**  ← → **to Host parallel interface**

| J2 | Host | | Signal name | Description |
|---|---|---|---|---|
| 1 | — | — | HSTB | STROBE*1 |
| 2 | — | — | GND | Ground |
| 3 | — | — | CD0 | Data bus |
| 4 | — | — | GND | Ground |
| 5 | — | — | CD1 | Data bus |
| 6 | — | — | GND | Ground |
| 7 | — | — | CD2 | Data bus |
| 8 | — | — | GND | Ground |
| 9 | — | — | CD3 | Data bus |
| 10 | — | — | GND | Ground |
| 11 | — | — | CD4 | Data bus |
| 12 | — | — | GND | Ground |
| 13 | — | — | CD5 | Data bus |
| 14 | — | — | GND | Ground |
| 15 | — | — | CD6 | Data bus |
| 16 | — | — | GND | Ground |
| 17 | — | — | CD7 | Data bus |
| 18 | — | — | GND | Ground |
| 19 | — | — | nACK | *2 |
| 20 | — | — | GND | Ground |
| 21 | — | — | BUSY | *3 |
| 22 | — | — | GND | Ground |
| 23 | — | — | PERROR | P.E.*4 |
| 24 | — | — | GND | Ground |
| 25 | — | — | SELECT | SELECT*5 |
| 26 | — | — | INIT | *7 |
| 27 | — | — | nAUTOFD | AUTO FEED XT*6 |
| 28 | — | — | nFAULT | Printer interrupt signal |
| 29 | — | — | N.C. | Not used |
| 30 | — | — | GND | Ground |
| 31 | — | — | GND | Ground |
| 32 | — | — | N.C. | Not used |
| 33 | — | — | GND | Ground |
| 34 | — | — | +5V*2 | Peripheral power |
| 35 | — | — | +5V*2 | Peripheral power |
| 36 | — | — | nSELCTIN | SLCT IN |

*1 Data transmission synchronizing signal (Forward direction)

*2 Data transmission syncronizing signal (Reverse direction)

*3 Data reception completion signal (Forward direction)

*4 Data transmission direction change response signal

*5 Extension request response signal

*6 Data reception completion signal (Reverse direction)

*7 Data transmission direction change request signal

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# Chapter 4

# Appendix

# 1. INSTALLING THE FAX-L350

**REFERENCE**

This machine has been designed for user installation.  Therefore, this manual contains only an outline description of the procedures.  For details of the installation, see the *USER'S GUIDE*.

## 1.1 Setting Up

- Choosing a Location for Your FAX-L350
  Before you set up Your FAX-L350, make sure you have read cautions of setting up FAX-L350.
- Unpacking Your FAX-L350
  Check that nothing is missing when the unit is unpacked.
- Assembling the FAX-L350
- Making Connections
  Connect the telephone line, a telephone, an answering machine or the power cord.
- **Service Data Setting (#5 TYPE)**
  **Set the country type to suit the communication standard used in your country.**
- The Toner Cartridge
- Loading Recording Paper
  Set paper in the auto sheet feeder and cassette, set the size of paper that is to be used.
- Setting the telephone line type
  Select the correct telephone line type in **TEL LINE TYPE**.
- Entering user information
  Enter user information, such as **DATE & TIME**, **UNIT TELEPHONE #**, **UNIT NAME**.

## 1.2 Checking Operations

- Copy operation
  Make a copy, and check that the operation is normal.
- Communication test
  Transmit to, and receive from other facsimiles, and check that images are sent normally when transmitted, and are printed normally when received.

**What to do when trouble occurs**

Very rarely, during use, the display may go out, all the buttons may stop working, or some other trouble may occur because of strong electrical noise or a large amount of static.  If such trouble occurs, initialize the RAM. During installation, we recommend that you perform the all clear operation after the power on. Refer to *NOTE: "ALL clear" when nothing works on Page 1-40* .

# 2. OPTION

## 2.1 HANDSET KIT

The optional handset is available. Make sure you have the following items. If anything is damaged or missing, notify your Canon dealer immediately.

HANDSET

HANDSET CRADLE

SCREWS WITH PLUGS
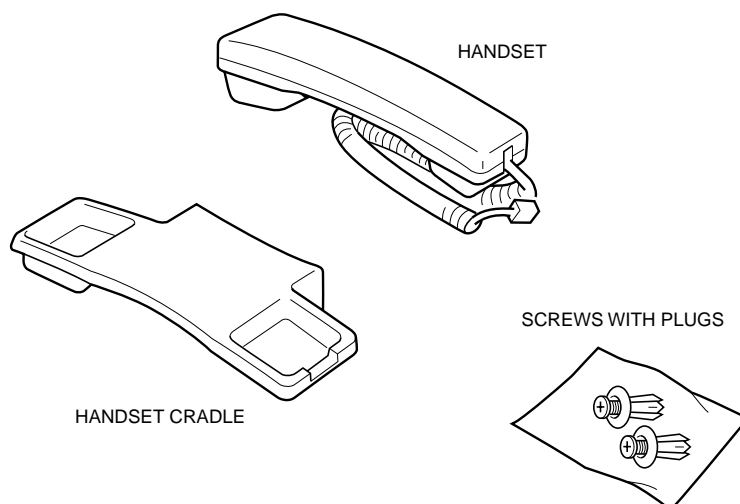
## *Attaching the Handset to Your Unit*

To attach the handset to your unit, follow these steps:

1. Remove the screws from the plugs and insert the plugs into the holes on the handset cradle.
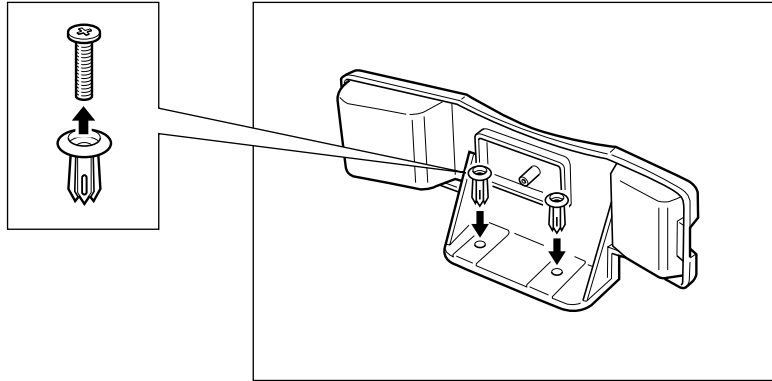


2. Insert the plugs with the handset cradle in the holes on the unit.
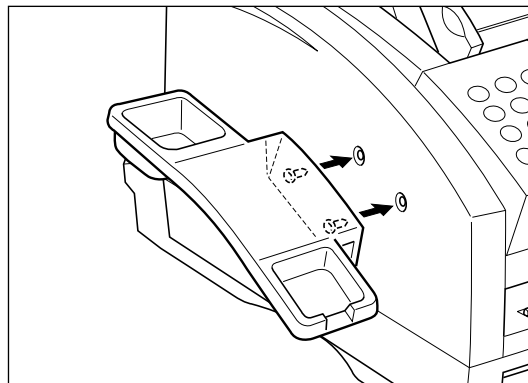


**Note** If you have difficulty inserting the plugs, turn the unit so that the left side is facing you and the right side is placed against a wall. This will allow you to insert the plugs without the unit moving.

3. Insert the screws into the plugs and push them in with your finger.
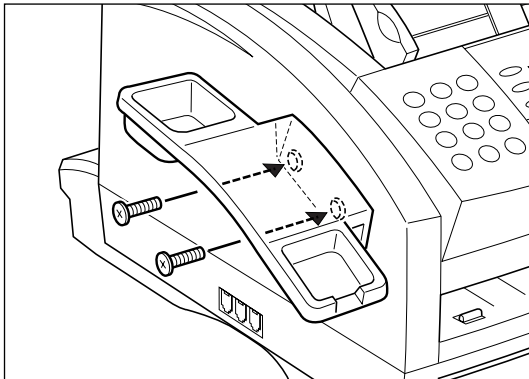


**Note**

❏ If you cannot push the screws in with your finger, use a Phillips screwdriver to push them in. (Do not screw them in as the screws may break.)

❏ Make sure the screws are inserted all the way into the plugs.
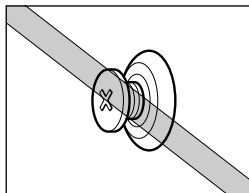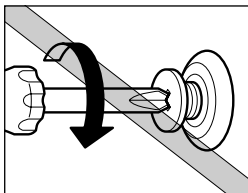
4.    Connect the handset cord to the input jack marked ✆ at the left side of the unit.



⚠ **Caution**
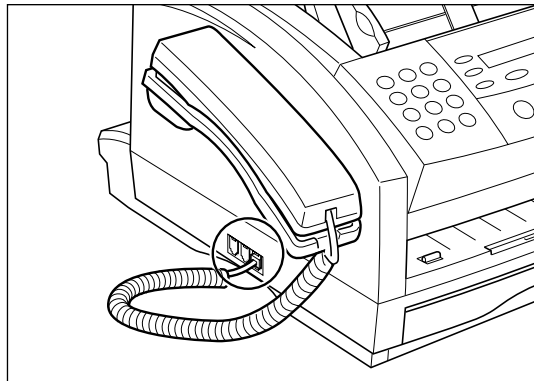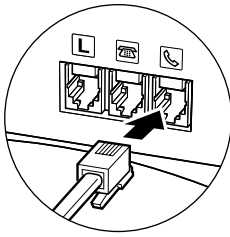
When carrying the unit, do not lift it by the handset cradle as it may break.



📝 **Note**
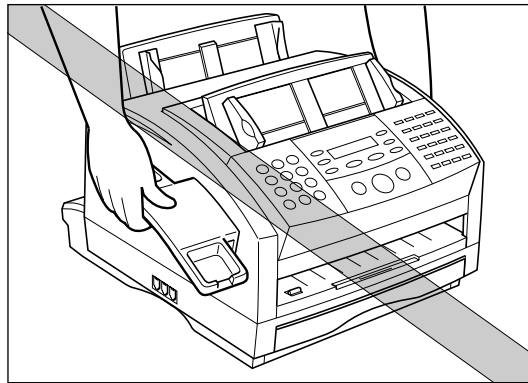
If you need to remove the handset cradle after it is installed, use a small Phillips screwdriver to remove the two screws.

**4-5**

## *Adjusting the Ringer Switch*

The ringer volume switch allows you to select the ring volume of the handset for incoming calls. Use a pen or other pointed object to adjust the switch to high or low.



RINGER VOLUME SWITCH

RINGER VOLUME SWITCH
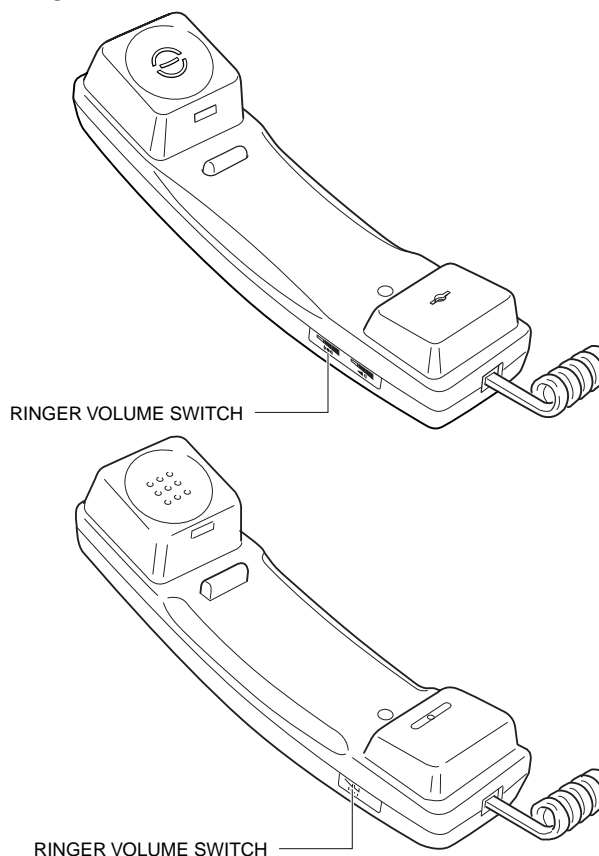
❏ Although there are two types of optional handsets, the functions and performance are identical. The type of handsets you can connect is different depending on the area you use your FAX-L350.

**Ringer Equivalence Number (R.E.N.) (UK only)**
Your British Telecom line has a maximum R.E.N. capacity of 4. Your Canon unit has a R.E.N. value of 1 (unless otherwise stated), and this handset also has a R.E.N. value of 1. You can therefore use additional equipment with a total R.E.N. value of up to 2.
If the R.E.N. value exceeds 4, the ringer volume will be reduced and one or more of the connected equipment may not function.

## *Maintaining Your Handset*

Follow these guidelines to maintain your handset in top working condition.

❏ Do not leave your handset exposed to direct sunlight.

❏ Do not install your handset in hot or humid conditions.

❏ Do not spray aerosol polishes on your handset as they may enter the holes on your handset and cause damage.

❏ Use a damp cloth to clean your handset.

# 3. USER DATA FLOW

## 3.1 User Data Flow (by Operation Panel)

Press the Data Registration button

- TEL REGISTRATION
  - 1-TOUCH SPD DIAL
    - TELEPHONE NUMBER
    - NAME
    - OPTIONAL SETTING
  - CODED SPEED DIAL
    - TELEPHONE NUMBER
    - NAME
    - OPTIONAL SETTING
  - GROUP DIAL
    - TELEPHONE NUMBER
    - NAME
- USER SETTINGS
  - DATA REGISTRATION
    - DATE & TIME
    - UNIT TELEPHONE#
    - UNIT NAME
    - TX TERMINAL ID
      - ON
        - TTI POSITION
          - **OUTSIDE IMAGE**
          - INSIDE IMAGE
      - OFF
        - TELEPHONE # MARK
          - **FAX**
          - TEL
    - SCANNING CONTRAST
      - DARKER
      - **STANDARD**
      - LIGHTER
    - OFFHOOK ALARM
      - **ON**
      - OFF
    - VOLUME CONTROL
      - CALLING VOLUME — 2 (1~3)
      - KEYPAD VOLUME — 2 (0~3)
      - ALARM VOLUME — 2 (0~3)
      - LINE MONITOR VOL — 2 (0~3)
    - RX CALL LEVEL
      - STANDARD
      - **HIGH**
    - TEL LINE TYPE
      - TOUCH TONE
      - **ROTARY PULSE**
    - R-KEY SETTING
      - **PSTN**
      - PBX
        - **EARTH CONNECTION**
        - PREFIX
        - HOOKING
  - REPORT SETTINGS
    - TX REPORT
      - **PRINT ERROR ONLY**
      - OUTPUT YES
      - OUTPUT NO
        - REPORT WITH TX IMEGE
          - **ON**
          - OFF
    - RX REPORT
      - PRINT ERROR ONLY
      - OUTPUT YES
      - **OUTPUT NO**
    - ACTIVITY REPORT
      - **ON**
      - OFF

**Figure 4-1 User Data Flow (1/3)**

```
─ TX SETTINGS ─┬─ ECM TX ─────────┬─ ON
               │                  └─ OFF
               ├─ MID PAUSE SET ──── 2 seconds (1~15)
               │
               ├─ AUTO REDIAL ──┬─ ON ──┬─ REDIAL TIMES ─────── 2 times (1~10)
               │                └─ OFF  └─ REDIAL INTERVAL ──── 2 minutes (1~99)
               │
               └─ TIME OUT ───────┬─ ON
                                  └─ OFF
─ RX SETTINGS ─┬─ ECM RX ───────┬─ ON
               │                └─ OFF
               │
               ├─ RX MODE ──┬─ FAX ONLY MODE
               │            │
               │            └─ FAX/TEL AUTO SW ─┬─ RING START TIME ──── 8 seconds (0~30)
               │                                ├─ F/T RING TIME ────── 22 seconds (10~60)
               │                                └─ F/T SWITCH ACTION ─┬─ RECEIVE
               │                                                      └─ DISCONNECT
               │
               ├─ INCOMING RING ──┬─ ON ── RING COUNT ──── 2 times (1~99)
               │                  └─ OFF
               │
               ├─ MAN / AUTO SWITCH ──┬─ ON ── F/T RING TIME ──── 15 seconds (1~99)
               │                      └─ OFF
               │
               ├─ REMOTE RX ──┬─ ON ── REMOTE RX ID ──── 25
               │              └─ OFF
               │
               └─ MEMORY RX ──┬─ ON
                              └─ OFF


─ FAX'S PRINTER SET ─┬─ RX REDUCTION ──┬─ ON ──┬─ VERTICAL ONLY
                     │                 └─ OFF  └─ HORIZ&VERTICAL
                     │
                     ├─ PAPER SIZE ──┬─ CASSETE ─┬─ LTR
                     │               │           └─ A4
                     │               └─ MP TRAY ─┬─ LTR
                     │                           ├─ LGL
                     │                           ├─ CUSTOM ─┬─ CUSTOM1/LONG
                     ├─ ECONOMY PRT ──┬─ ON      └─ A4      └─ CUSTOM2/SHORT
                     │                └─ OFF
                     │
                     └─ TONER SUPPLY LOW ─┬─ KEEP PRINTING
                                          └─ RX TO MEMORY
```

**Figure 4-2 User Data Flow (2/3)**

4-9

```
— POLLING BOX ——— SETUP FILE ——— FILE NAME
                               ├ PASSWORD
                               ├ TX PASSWORD
                               └ ERASE AFTER TX

                 — CAHNGE DATA ——— FILE NAME
                               ├ PASSWORD
                               ├ TX PASSWORD
                               └ ERASE AFTER TX

                 — DELETE FILE

— SYSTEM SETTINGS ——— UN/LOCK PHONE ——— PASSWORD
                                    └ LOCK PHONE ——— OFF
                                                  └ ON

                    — RX RESTRICTION ——— ON
                                      └ OFF

                    — DATE SETUP ——— MM/DD/YYYY
                                  ├ DD/MM/YYYY
                                  └ YYYY MM/DD

                    — DISPLAY LANGUAGE ——— ENGLISH
                                        ├ FRENCH
                                        ├ SPANISH
                                        ├ GERMAN
                                        ├ ITALIAN
                                        ├ DUTCH
                                        ├ FINNISH
                                        ├ PORTUGUESE
                                        ├ NORWEGIAN
                                        ├ SWEDISH
                                        ├ DANISH
                                        ├ SLOVENE
                                        ├ CZECH
                                        └ HUNGARIAN

                    — TX START SPEED ——— 33600 bps
                                      ├ 14400 bps
                                      ├ 9600 bps
                                      ├ 7200 bps
                                      ├ 4800 bps
                                      └ 2400 bps

                    — RX START SPEED ——— 33600 bps
                                      ├ 14400 bps
                                      ├ 9600 bps
                                      ├ 7200 bps
                                      ├ 4800 bps
                                      └ 2400 bps
```

**Figure 4-3 User Data Flow (3/3)**

# 4. MAKER CODE

The 1-byte maker code displayed on the error dump list corresponds to the list of makers shown below.

**REFERENCE**

| Upper \ Lower | 0 (0000) | 1 (0001) | 2 (0010) | 3 (0011) | 4 (0100) | 5 (0101) | 6 (0110) | 7 (0111) | 8 (1000) | 9 (1001) | A (1010) | B (1011) | C (1100) | D (1101) | E (1110) | F (1111) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 (0000) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 1 (0001) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 (0010) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 (0011) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 (0100) | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ |
| 5 (0101) | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ | □ |
| 6 (0110) | MASTER NET | | | | KONICA | | MITA | | | | BROTHER | | | | | |
| 7 (0111) | | | | | | | | | | | | | | | | |
| 8 (1000) | ANRITSU | | IWASAKI (DEX) | | OKI | | CASIO | | **Canon** | | SANYO | | SHARP | | TAMURA | |
| 9 (1001) | TOSHIBA | | NEC | | JRC | | HITACHI | | FUJIXEROX | | FUJITSU | | MATSUSHITA ELECTRIC | | PANASONIC (MATSUSHITA) | |
| A (1010) | MITSUBISHI | | MURATA | | RICHO | | OMRON | | TOYO | | NITTSUKO | | MATSUSHITA COMMUNICATION | | TEC | |
| B (1011) | LOGIC SYSTEM INTER. | | OKURA | | SONY | | HITACHI TELECOM TECH. | | HITACHI SOFTWARE | | KUONI | | IBM JAPAN | | SILVER | |
| C (1100) | | | | | | | | | | | | | | | | |
| D (1101) | | | | | | | | | | | | | | | | |
| E (1110) | | | | | | | | | | | | | | | | |
| F (1111) | | | | | | | | | | | | | | | | |

○ : National organization    △ : NTT    □ : KDD

**Figure 4-4 Maker Code**

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Printed on paper that
contains 60% reused paper.

Canon

# FAX-L350

# PARTS
# CATALOG

**REVISION 0**

| | | | |
|---|---|---|---|
| **FAX-L350** | H12-1573 | 230V | EC |
| **FAX-L350** | H12-1574 | 230V | UK |
| **FAX-L350** | H12-1575 | 230V | GER |
| **FAX-L350** | H12-1577 | 230V | FRN |
| **FAX-L350** | H12-1578 | 230V | AUS |
| **FAX-L350** | H12-1579 | 230V | AE |
| **HANDSET KIT E3** | H12-3603 | | |
| **HANDSET KIT U3** | H12-3614 | | |

# Canon

 **DTP System**

 The data contained on this manual were created using Apple Macintosh® computers.

 Document creation and page layout were performed using Adobe® PageMaker® 6.5J.

 Logos and illustrations were created using Macromedia® FreeHand 8.0J.

# I. CONTENTS

# II. ABOUT THIS MANUAL

## 1. ILLUSTRATION INDEX

For illustration index, the parts layout illustrations in this parts catalog are listed in abbreviated form in order of illustration number to identify the pages they appear on. To find an illustration of a part, see the ILLUSTRATION INDEX.

## 2. PARTS LAYOUT & PARTS LIST

### Parts layout illustration

#### a) Parts search

Find a part from the parts layout illustration and find its key number from the parts list to identify the part number and name.

Further, screws, nuts, washers, grip rings, pins and spacers are mentioned in the parts list.

**Note:** If parts have the same or similar shape but different specifications, their key number is assigned to several part numbers and names in the parts list.

#### b) Parts replacement procedure

The parts layout illustrations are arranged according to the disassembly procedure of the product.

When a unit in the illustration can be disassemble further, a reference illustration page of the disassembly will be included.

Parts where grease is to be applied are displayed as "Lubrication". When replacing parts, or if grease has accidentally been wiped off, refer to "4". (Lubrications), and reapply the grease.

The parts require carefully work are marked "See page 5-x". So refer to the corresponded page "5". (GUIDE TO REPLACEMENT).

The letters ( A , B etc.) in the illustration indicate the connection locations of cables and screws.

### Parts list

#### a) FIGURE & KEY No.

The FIGURE & KEY No. column corresponds to the key numbers assigned to the parts in the parts layout illustration.

It also corresponds to the part locations printed on the PC board.

#### b) PART NUMBER

The PART NUMBER column gives the part numbers corresponding to the key numbers. To order a part, indicate the part number clearly.

**Note:** Parts marked NPN are not service parts.

#### c) RANK

The service parts with N in the RANK column are order parts.

#### d) QTY

The QTY column gives the number of parts in the corresponding components layout illustration.

#### e) DESCRIPTION

The DESCRIPTION column gives the part names in English.

To order a part, indicate the part name, too.

## 3. TOOL

This is a list of tools used for servicing products.

## 4. LUBRICATIONS

Where grease is to be applied in order to allow moving parts to work smoothly, and to increase conductivity, the type and amount of grease to be used will be mentioned.

## 5. GUIDE TO REPLACEMENT

Explains the special cares and cautions for the parts replacement.

## 6. NUMERICAL INDEX

All the parts listed in this parts catalog are arranged in order of part number. You can identify part locations and names from the NUMERICAL INDEX.

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# 1. ILLUSTRATION INDEX
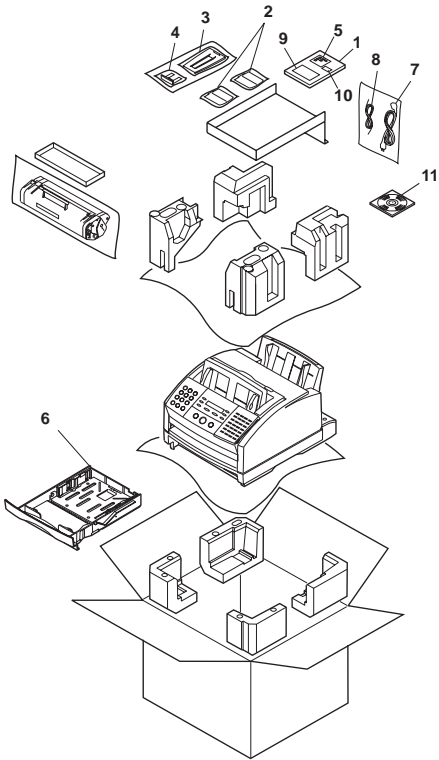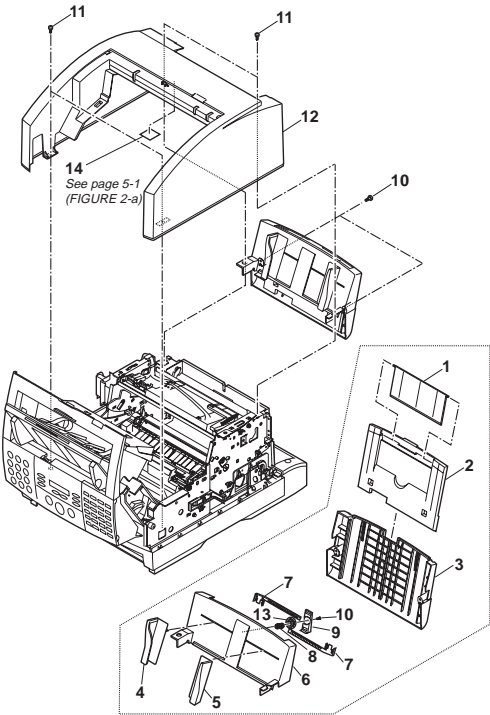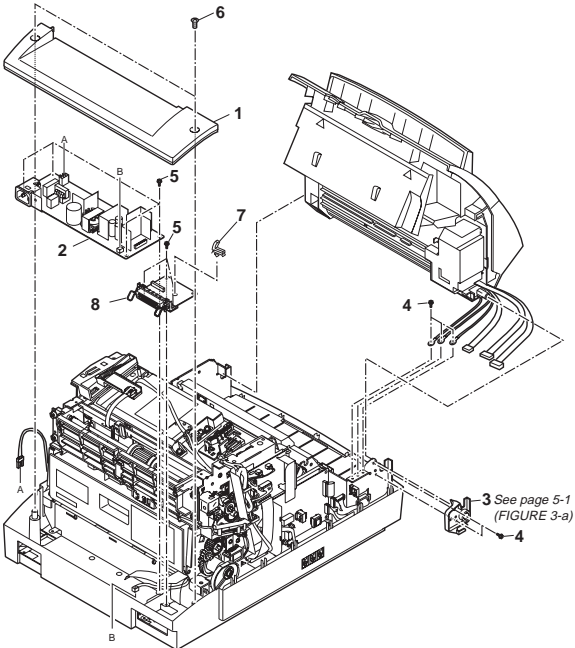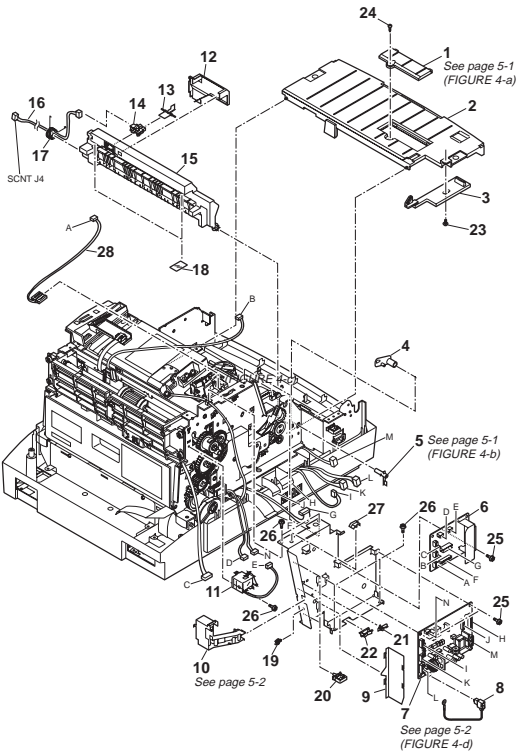
| FIGURE 1 | FAX-L350 PACKAGE CONTENTS | See Page 2-1 | FIGURE 2 | COVERS & TRAY ASS'Y | See Page 2-3 |
|---|---|---|---|---|---|



| FIGURE 3 | READING ASS'Y & CIRCUIT BOARDS | See Page 2-5 | FIGURE 4 | CIRCUIT BOARDS & COVERS | See Page 2-7 |
|---|---|---|---|---|---|

| FIGURE 5 | COVERS & MAIN FRAME | See Page 2-9 |
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| FIGURE 6 | CIRCUIT BOARDS | See Page 2-11 |
|---|---|---|



| FIGURE 7 | CIRCUIT BOARD & PAPER PICKUP SECTION | See Page 2-13 |
|---|---|---|



| FIGURE 8 | READING ASS'Y 1 | See Page 2-15 |
|---|---|---|

| FIGURE 9 | READING ASS'Y 2 | See Page 2-17 | FIGURE 10 | OPERATION PANEL ASS'Y & ADF UPPER | See Page 2-19 |
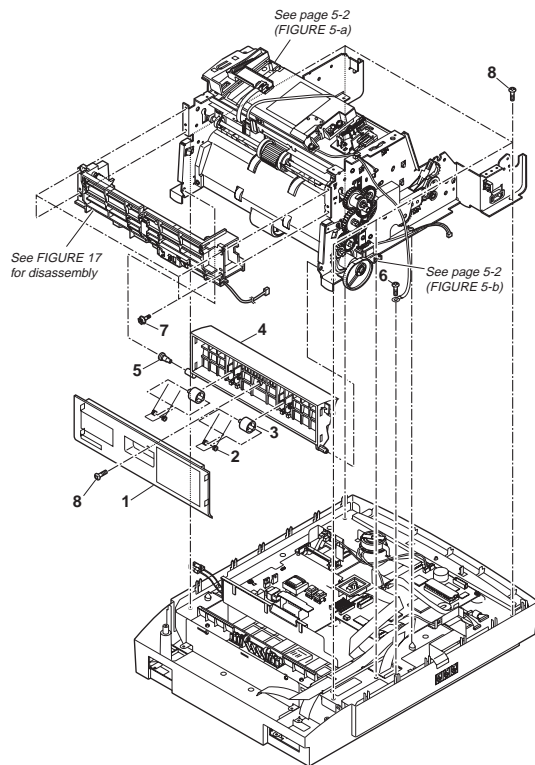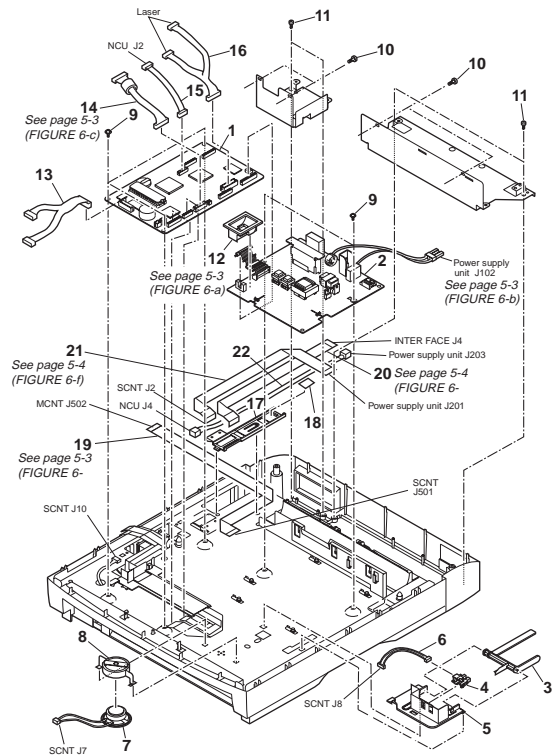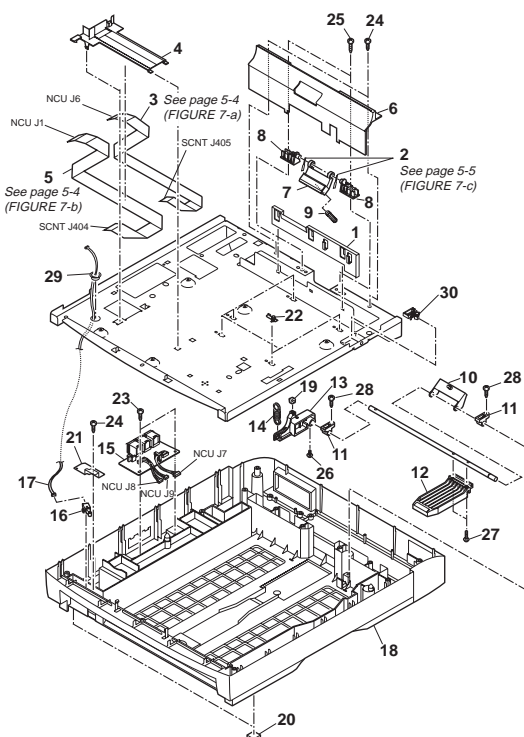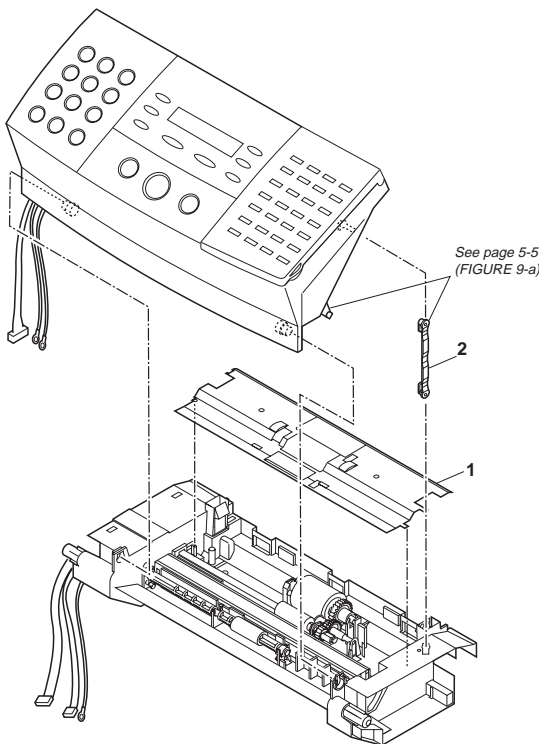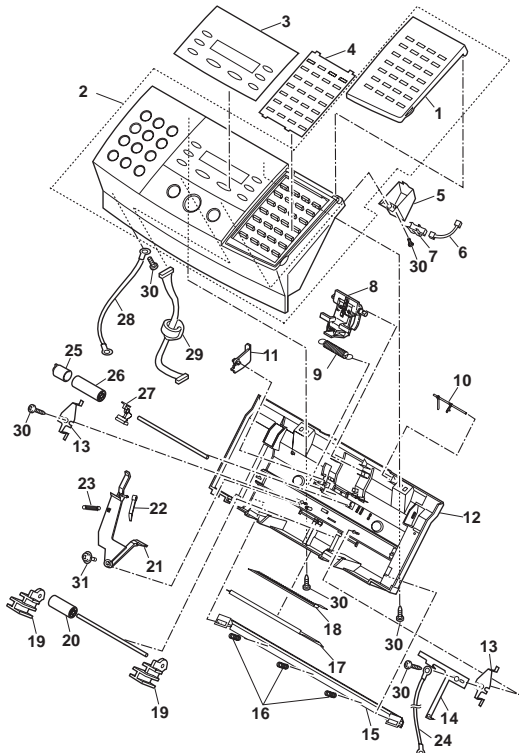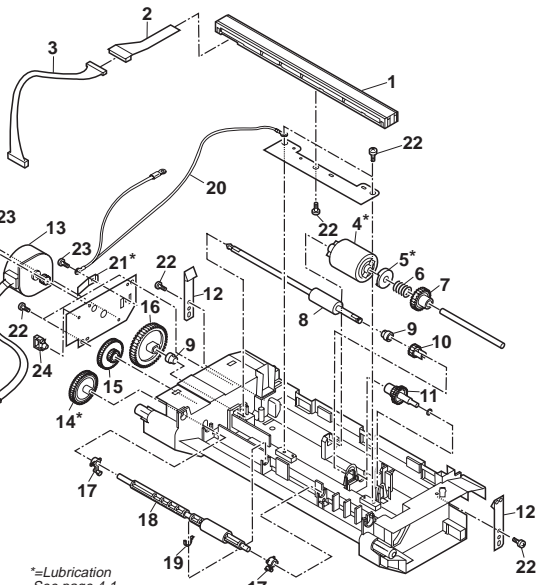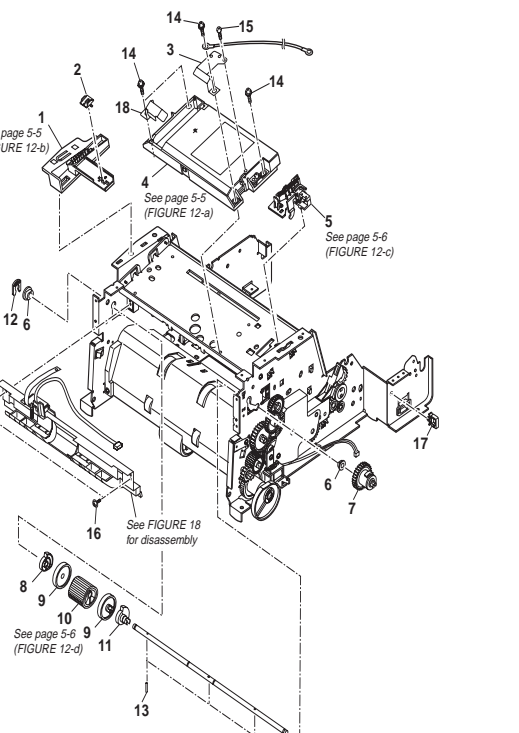
See page 5-5 (FIGURE 9-a)

| FIGURE 11 | ADF LOWER | See Page 2-21 | FIGURE 12 | SCANNER ASS'Y | See Page 2-23 |

*=Lubrication
See page 4-1

See page 5-5
(FIGURE 12-b)

See page 5-5
(FIGURE 12-a)

See page 5-6
(FIGURE 12-c)

See FIGURE 18
for disassembly

See page 5-6
(FIGURE 12-d)

| FIGURE 13   PAPER FEED SECTION | See Page 2-25 | FIGURE 14   DRIVE GEARS | See Page 2-27 |
|---|---|---|---|



| FIGURE 15   FIXING SECTION 1 | See Page 2-29 | FIGURE 16   FIXING SECTION 2 | See Page 2-31 |
|---|---|---|---|

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|---|---|---|---|



| FIGURE 19   DELIEVRY ASS'Y | See Page 2-37 | FIGURE 20   TRANSFER BLOCK ASS'Y | See Page 2-39 |
|---|---|---|---|

| **FIGURE 21**  CASSETTE ASS'Y | See Page 2-41 | **FIGURE 22**  SCNT BOARD ASS'Y | See Page 2-43 |
|---|---|---|---|



| **FIGURE 23**  PCNT BOARD ASS'Y | See Page 2-45 | **FIGURE 24**  NCU BOARD ASS'Y | See Page 2-47 |
|---|---|---|---|

| FIGURE 25 | MODULAR BOARD ASS'Y | See Page 2-49 | FIGURE 26 | HANDSET KIT E3 HANDSET KIT U3 | See Page 2-51 |
|---|---|---|---|---|---|
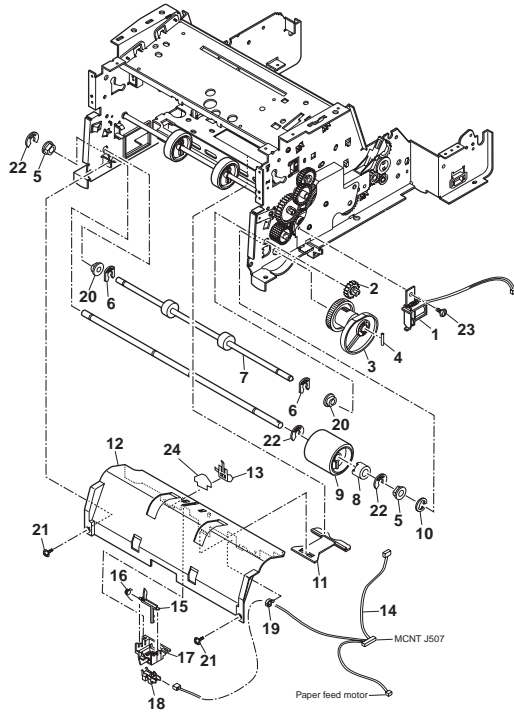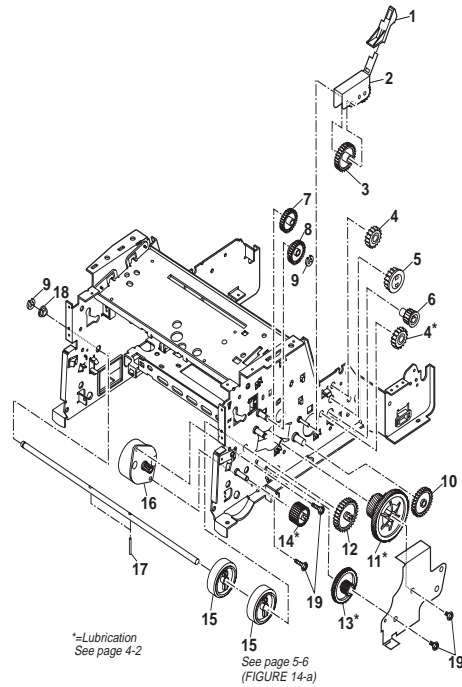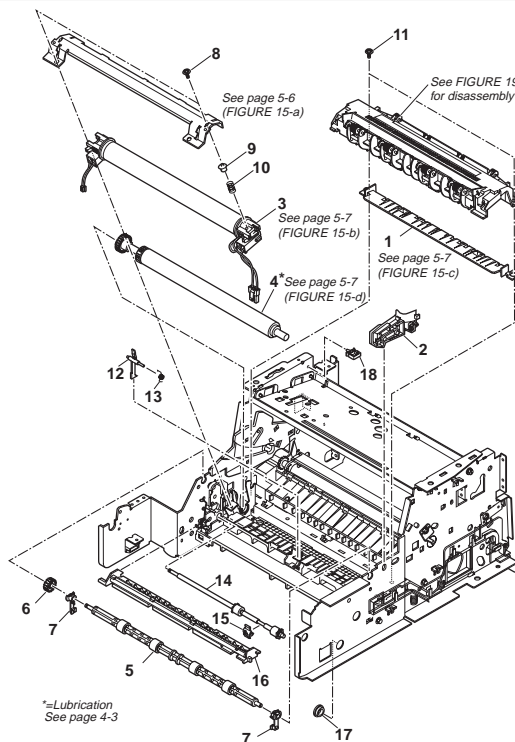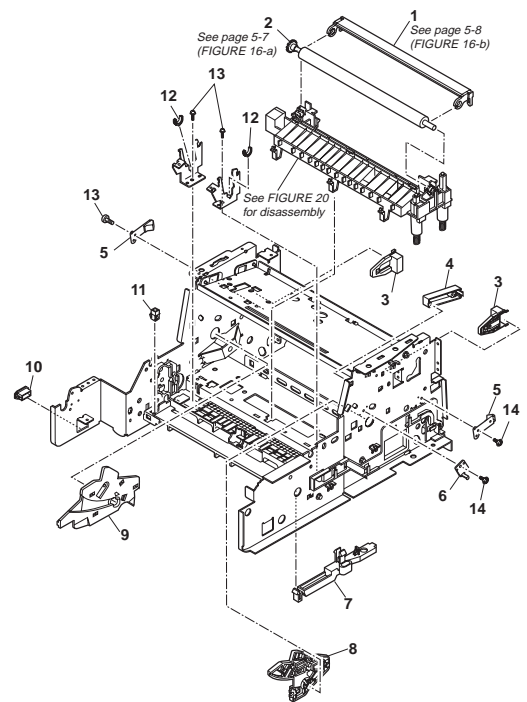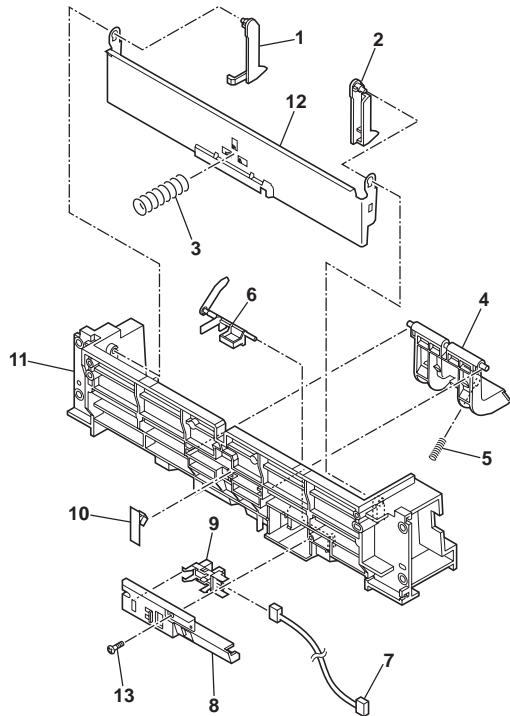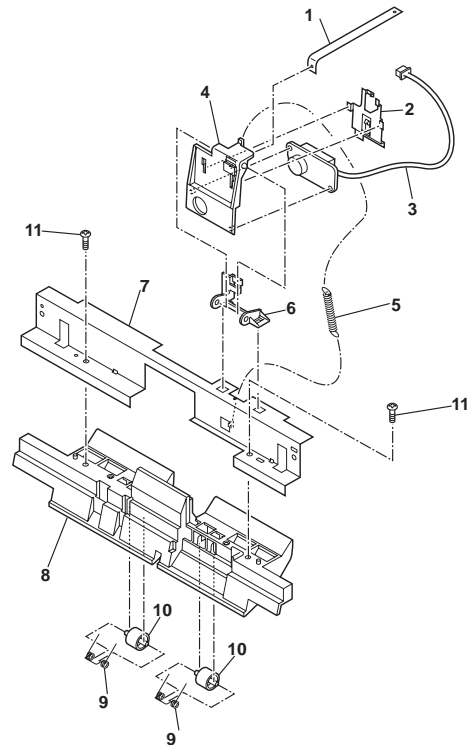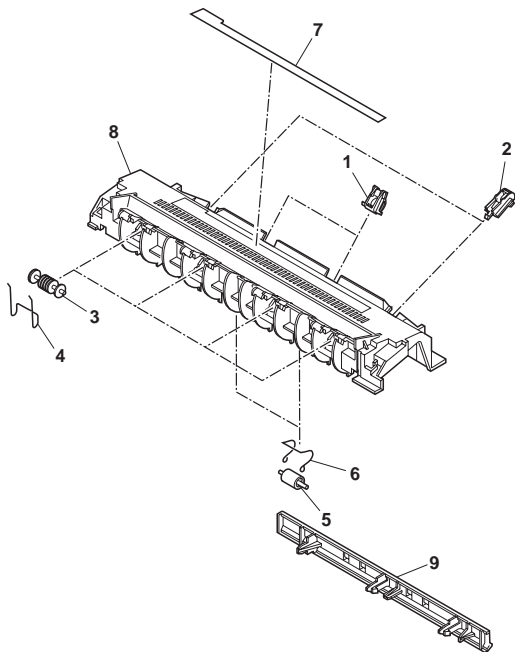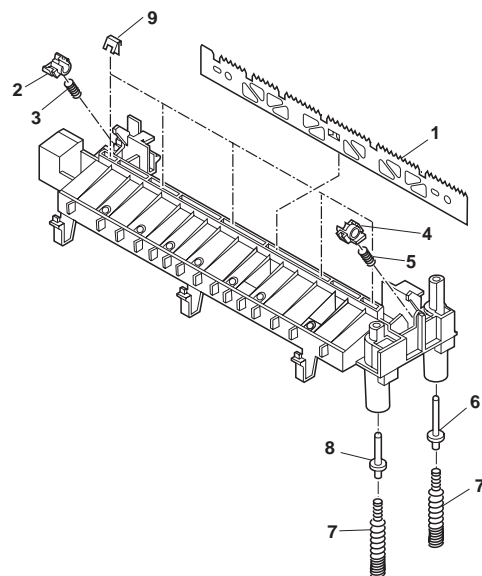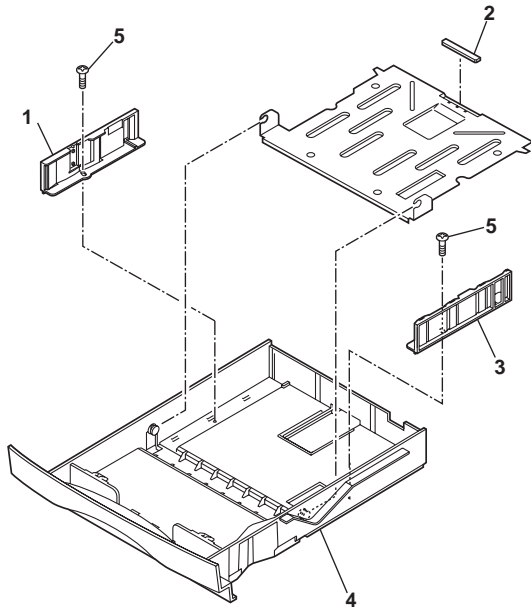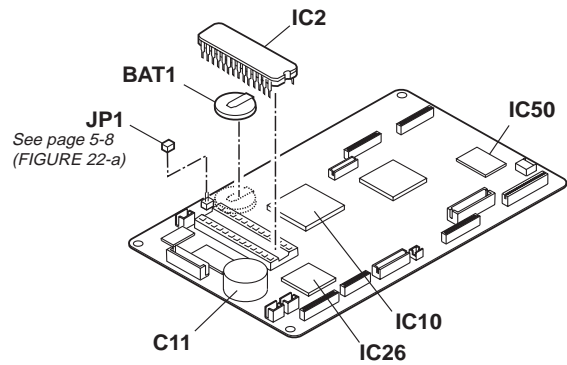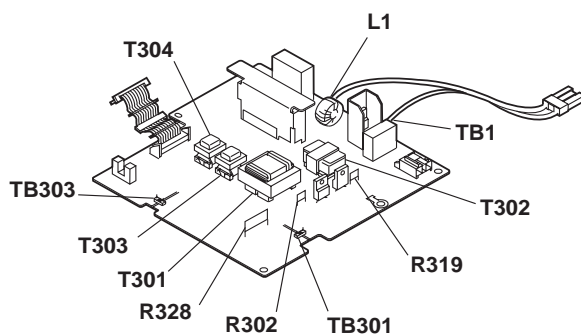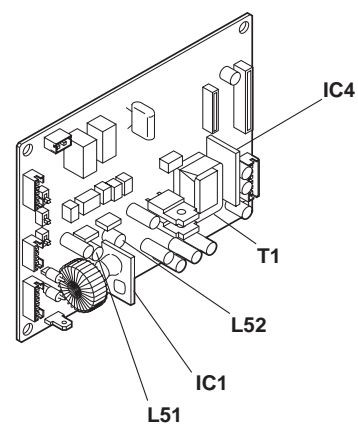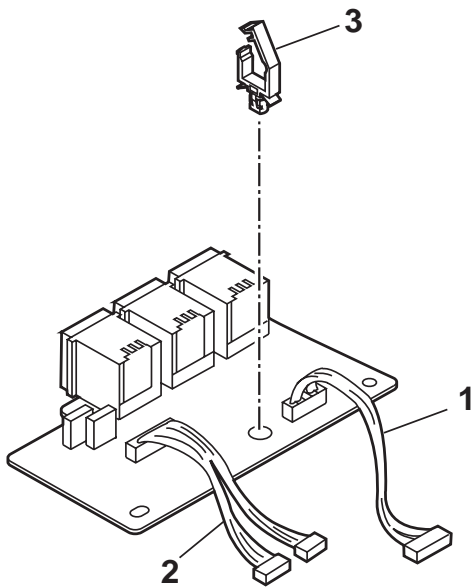


The parts shown at Key No. 4 are not used with this model.
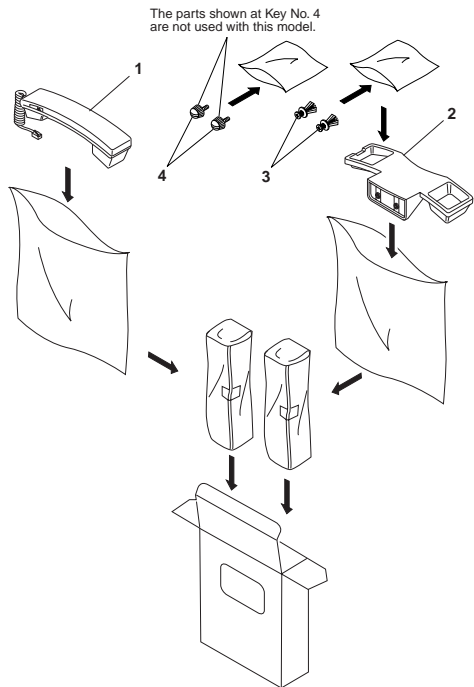
| FIGURE 27 | TOOLS | See Page 3-1 | | |
|---|---|---|---|---|
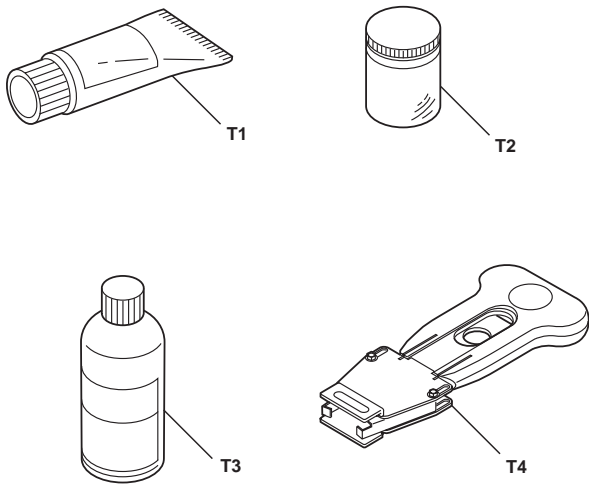
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# 2. PARTS LAYOUT & PARTS LIST

## FIGURE 1  FAX-L350 PACKAGE CONTENTS
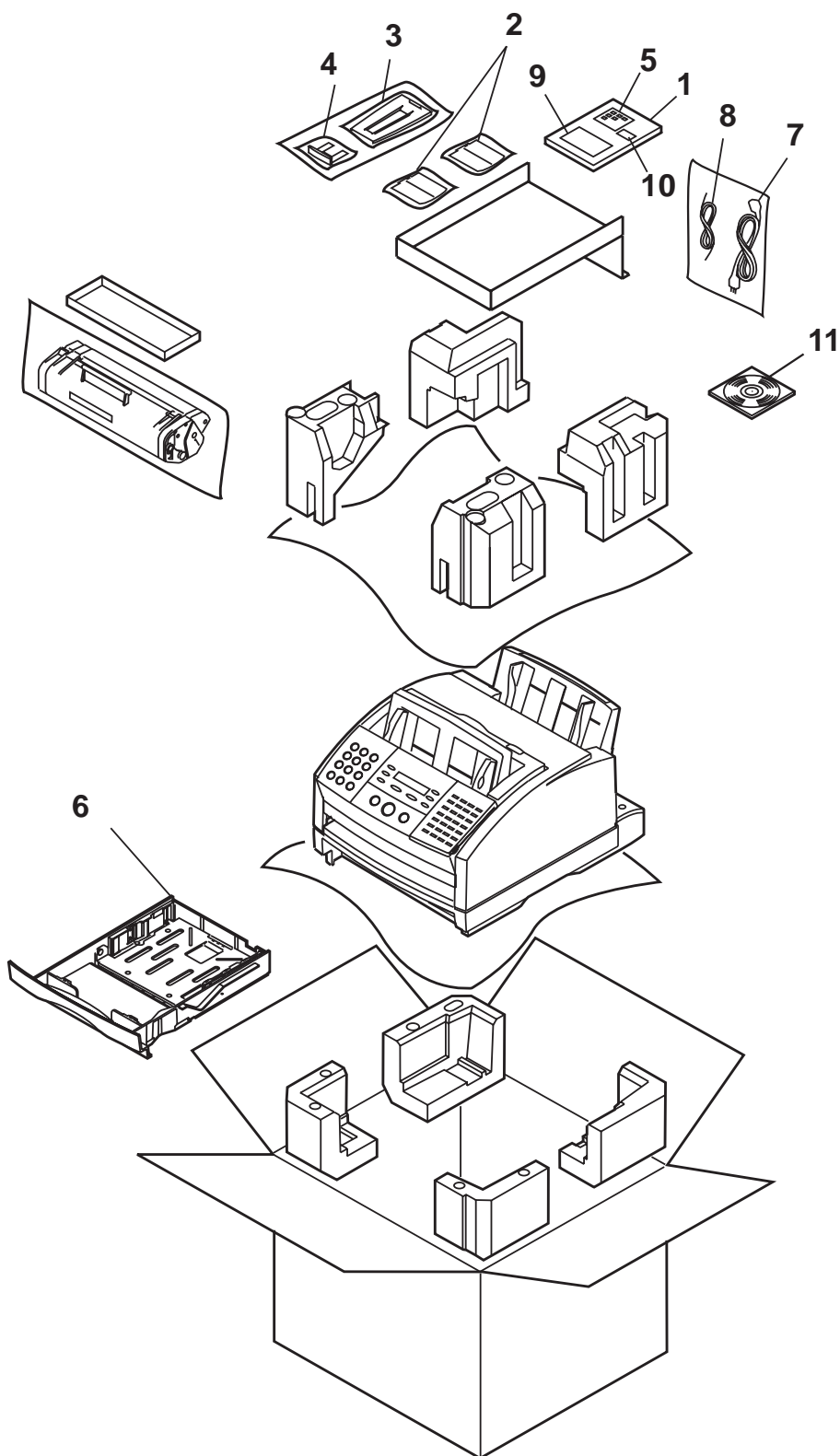
| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 1 - 1 | HT1-2148-000 | N | 1 | USER'S GUIDE (ENGLISH) | UK AUS AE |
| | HT1-3092-000 | N | 1 | USER'S GUIDE (MODELE FRANCE) | FRN |
| | HT1-5068-000 | N | 1 | USER'S GUIDE (DEUTSCH) | GER |
| 2 | HB1-4360-000 | | 2 | TRAY, SUPPORT | |
| 3 | HB1-4348-000 | | 1 | TRAY, DOCUMENT | |
| 4 | HB1-4349-000 | | 1 | TRAY, DOCUMENT,EXTENSION | |
| 5 | HB1-4357-000 | | 1 | LABEL, DESTINATION | |
| 6 | HG5-2210-000 | | 1 | CASSETTE ASS'Y (A4) | |
| 7 | WT3-5020-000 | | 1 | CORD, POWER | GER FRN AE |
| | WT3-5023-000 | | 1 | CORD, POWER | AUS |
| | WT3-5058-000 | | 1 | CORD, POWER | UK |
| 8 | HH2-1914-000 | | 1 | MODULAR CORD, 6P | UK |
| | HH2-2074-000 | | 1 | MODULAR CORD (GERM) | GER |
| | HH2-2219-000 | | 1 | MODULAR CORD | FRN |
| | HH2-2478-000 | | 1 | MODULAR CORD, 2P | AUS |
| | HH2-2824-000 | | 1 | MODULAR CORD, 2P | AE |
| 9 | HB1-4316-000 | | 1 | LABEL, WARNING | |
| 10 | HA2-0868-000 | | 1 | LABEL, MERCURY | UK |
| 11 | HH4-3369-000 | N | 1 | CD-ROM, DRIVER SOFTWARE | |

2-2

# FIGURE 2  COVERS & TRAY ASS'Y



14
*See page 5-1
(FIGURE 2-a)*

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 2 - 1 | HB1-4340-000 | | 1 | TRAY, PAPER FEED, EXTENTION | |
| 2 | HB1-4339-000 | | 1 | TRAY, PAPER FEED | |
| 3 | HB1-4338-000 | | 1 | GUIDE, PAPER FEED TRAY | |
| 4 | HB1-4336-000 | | 1 | GUIDE, PAPER FEED,LEFT | |
| 5 | HB1-4337-000 | | 1 | GUIDE, PAPER FEED,RIGHT | |
| 6 | HB1-4334-000 | | 1 | TRAY, PAPER FEED | |
| 7 | HB1-3008-000 | | 2 | RACK | |
| 8 | HS5-2141-020 | | 1 | SPRING, SLIDER | |
| 9 | HB1-4335-000 | | 1 | COVER, GEAR | |
| 10 | XB4-7300-807 | | 3 | SCREW, TAPTIGHT, BINDING HEAD | |
| 11 | XB3-6301-000 | | 4 | SCREW, RS, M3X10 | |
| 12 | HB1-4346-000 | | 1 | COVER, UPPER | |
| 13 | HS5-0254-000 | | 1 | GEAR, Z16 | |
| 14 | HB1-4380-000 | | 1 | SHEET | |

# FIGURE 3  READING ASS'Y & CIRCUIT BOARDS



**3** *See page 5-1*
*(FIGURE 3-a)*

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 3 - 1 | HB1-4347-000 | | 1 | COVER, POWER SUPPLY | |
| 2 | HH3-5335-000 | | 1 | POWER SUPPLY UNIT | EC UK GER FRN |
| | HH3-5357-000 | | 1 | POWER SUPPLY UNIT | AUS AE |
| 3 | HB1-4351-000 | | 1 | GUIDE, CABLE | |
| 4 | XB3-6300-800 | | 5 | SCREW, RS, M3X8 | |
| 5 | XB1-2300-807 | | 7 | SCREW, CROSS-RECESS, FCH | |
| 6 | XB4-7401-007 | | 2 | SCREW, PAN HEAD SELF-TAPPING | |
| 7 | WT2-5134-000 | | 1 | CLAMP, CABLE | |
| 8 | HG5-2226-000 | | 1 | INTERFACE BOARD ASS'Y | |

# FIGURE 4  CIRCUIT BOARDS & COVERS



*See page 5-1 (FIGURE 4-a)*

*See page 5-1 (FIGURE 4-b)*

*See page 5-2 (FIGURE 4-c)*

*See page 5-2 (FIGURE 4-d)*

SCNT J4

| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 4 - 1 | HB1-4332-000 | | 1 | COVER, ROM | |
| 2 | HB1-4331-000 | | 1 | GUIDE, PAPER EJECT | |
| 3 | HB1-4333-000 | | 1 | LEVER | |
| 4 | HB1-4352-000 | | 1 | SUPPORT, LEVER | |
| 5 | HB1-4353-000 | | 1 | SHAFT, SUPPORT,LEVER | |
| 6 | HG5-2225-000 | | 1 | MCNT BOARD ASS'Y | |
| 7 | HG5-2043-000 | | 1 | NCU BOARD ASS'Y | EC UK GER FRN |
| | HG5-2048-000 | | 1 | NCU BOARD ASS'Y | AUS AE |
| 8 | HH2-2967-000 | | 1 | WIRE, GROUNDING | |
| 9 | HB1-4359-000 | | 1 | COVER, CABLE,MCNT | |
| 10 | HB1-4288-000 | | 1 | GUIDE, CABLE | |
| 11 | HH7-2418-000 | | 1 | SOLENOID | |
| 12 | HB1-4260-000 | | 1 | COVER, OVERFLOW SENSOR | |
| 13 | HB1-4259-000 | | 1 | ARM, OVERFLOW DETECT | |
| 14 | WG8-5362-000 | | 1 | IC, TLP1241, PHOTO-INTERRUPTER | |
| 15 | HB1-4258-000 | | 1 | COVER, PAPER EJECT, FACE DOWN | |
| 16 | HH2-2952-000 | | 1 | CABLE WITH CONNECTOR, 3P | |
| 17 | HS5-2192-000 | | 1 | SPRING | |
| 18 | HB1-4261-000 | | 2 | SHEET | |
| 19 | WT2-5026-000 | | 1 | CLIP, CABLE | |
| 20 | WT2-0317-000 | | 3 | CLIP, CABLE | |
| 21 | HB1-4361-000 | | 1 | SPACER | |
| 22 | WT2-5629-000 | | 1 | CLIP | |
| 23 | XA9-0476-000 | | 1 | SCREW, TP M3X8 | |
| 24 | XB4-7301-007 | | 1 | SCREW, TAP TIGHT BH3X10 | |
| 25 | XB1-2300-807 | | 3 | SCREW, CROSS-RECESS, FCH | |
| 26 | XB3-6300-800 | | 5 | SCREW, RS, M3X8 | |
| 27 | WT2-5089-000 | | 1 | CLAMP | |
| 28 | HH2-2968-000 | | 1 | CABLE WITH CONNECTOR, 3P | |

# FIGURE 5  COVERS & MAIN FRAME

*See page 5-2
(FIGURE 5-a)*

8

*See FIGURE 17
for disassembly*

*See page 5-2
(FIGURE 5-b)*

6

7

4

5

3

2

8    1
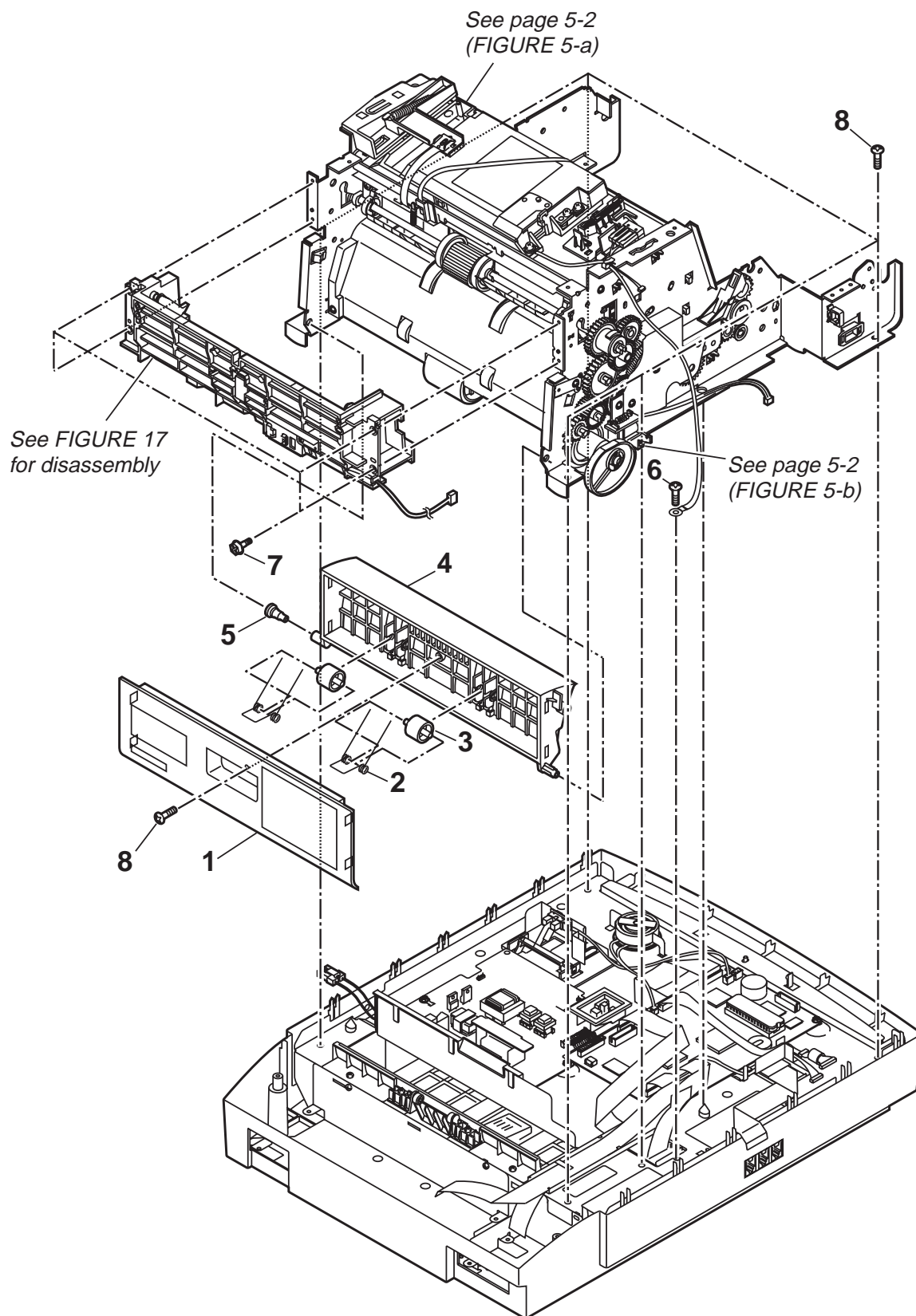
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 5 - 1 | HB1-4281-000 | | 1 | COVER, UPPER,RELEASE | |
| 2 | HS5-2196-000 | | 2 | SPRING, WIRE | |
| 3 | HS5-6024-000 | | 2 | ROLLER, PAPER GUIDE | |
| 4 | HB1-4280-000 | | 1 | COVER, RELEASE | |
| 5 | HB1-4354-000 | | 1 | PIVOT | |
| 6 | XB3-6300-800 | | 1 | SCREW, RS, M3X8 | |
| 7 | HS5-9012-000 | | 4 | SCREW, TAP M3X6 | |
| 8 | XB4-7401-007 | | 6 | SCREW, PAN HEAD SELF-TAPPING | |

# FIGURE 6  CIRCUIT BOARDS



Laser

NCU  J2

**16**

**15**

**14**

*See page 5-3 (FIGURE 6-c)*

**9**

**13**

**11**

**10**

**10**

**11**

**1**

**12**

*See page 5-3 (FIGURE 6-a)*

**2**

Power supply unit  J102

*See page 5-3 (FIGURE 6-b)*

**9**

INTER FACE J4

Power supply unit J203

**20** *See page 5-4 (FIGURE 6-*

Power supply unit J201

**21**

*See page 5-4 (FIGURE 6-f)*

**22**

SCNT J2

MCNT J502

NCU J4

**17**

**18**

**19**

*See page 5-3 (FIGURE 6-*

SCNT J501

SCNT J10

**8**

SCNT J7

**7**

**6**

**4**

**3**

**5**

SCNT J8

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 6 - 1 | HG5-2218-000 | | 1 | SCNT BOARD ASS'Y | |
| 2 | HG5-2221-000 | | 1 | PCNT BOARD ASS'Y | |
| 3 | HB1-4299-000 | | 1 | ARM, DETECTION (RPS) | |
| 4 | WG8-5362-000 | | 1 | IC, TLP1241, PHOTO-INTERRUPTER | |
| 5 | HB1-4300-000 | | 1 | MOUNT, ARM,DETECTION | |
| 6 | HH2-2951-000 | | 1 | CABLE WITH CONNECTOR, 3P | |
| 7 | HH7-2426-000 | | 1 | SPEAKER UNIT | |
| 8 | HB1-3023-000 | | 1 | HOLDER, SPEAKER | |
| 9 | XA9-0863-000 | | 5 | SCREW, TAP M3X6 | |
| 10 | XB3-6300-800 | | 4 | SCREW, RS, M3X8 | |
| 11 | XB4-7401-007 | | 4 | SCREW, PAN HEAD SELF-TAPPING | |
| 12 | RF5-2382-000 | | 1 | COVER, WATERPROOF | |
| 13 | HH2-2954-000 | | 1 | CABLE WITH CONNECTOR, 10P | |
| 14 | HH2-2959-000 | | 1 | CABLE WITH CONNECTOR, 9P | |
| 15 | HH2-2964-000 | | 1 | CABLE WITH CONNECTOR, 6P | |
| 16 | HH9-0259-000 | | 1 | CABLE WITH CONNECTOR, 11P | |
| 17 | HB1-4295-000 | | 1 | GUIDE, CABLE,SCNT | |
| 18 | HB1-4383-000 | | 1 | SHEET | |
| 19 | HH2-2946-000 | | 1 | CABLE, FLAT, 21P | |
| 20 | HH2-2949-000 | | 1 | CABLE, FLAT, 20P | |
| 21 | HH2-2950-000 | | 1 | CABLE, FLAT, 16P | |
| 22 | HH2-2962-000 | | 1 | CABLE WITH CONNECTOR, 2P | |

# FIGURE 7 CIRCUIT BOARD & PAPER PICKUP SECTION



NCU J6

NCU J1

**3** *See page 5-4 (FIGURE 7-a)*

SCNT J405

**5**
*See page 5-4 (FIGURE 7-b)*

SCNT J404

**25** **24**

**6**

**8**

**2** *See page 5-5 (FIGURE 7-c)*

**7**

**8**

**9**

**1**

**29**

**30**

**22**

**10** **28**

**11**

**19** **13** **28**

**14**

**11**

**12**

**23**

**24**

**15**

**21**

NCU J7

NCU J8

NCU J9

**17**

**16**

**26**

**27**

**18**

**20**
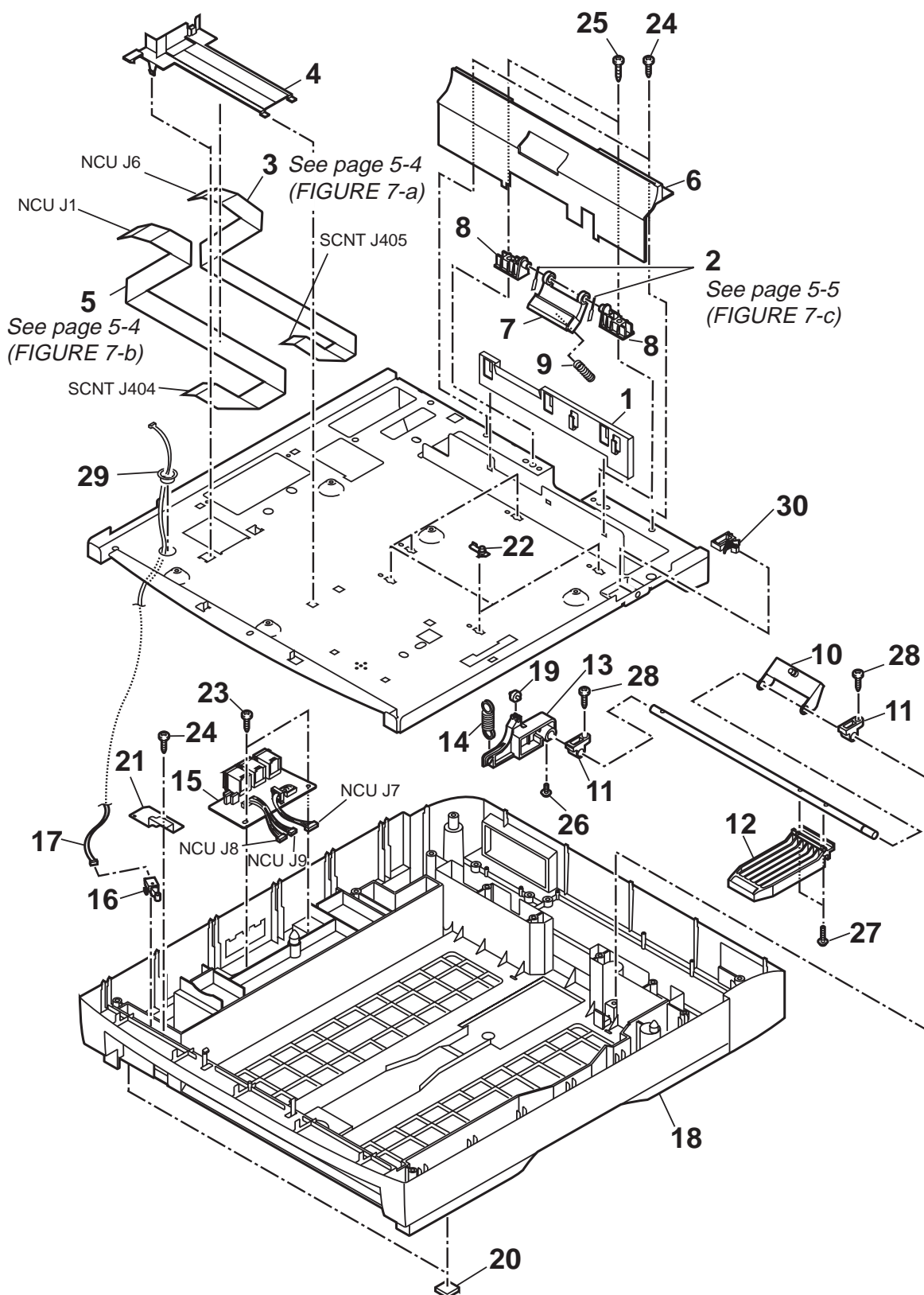
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 7 - 1 | HB1-4326-000 | | 1 | GUIDE, CABLE,PCNT | |
| 2 | HB1-4369-000 | | 2 | SHEET | |
| 3 | HH2-2947-000 | | 1 | CABLE, FLAT, 14P | |
| 4 | HB1-4301-000 | | 1 | GUIDE, CABLE,NCU | |
| 5 | HH2-2948-000 | | 1 | CABLE, FLAT, 23P | |
| 6 | HB1-4296-000 | | 1 | GUIDE, CASSETTE,PAPER FEED | |
| 7 | HB1-4297-000 | | 1 | PAD, SEPARATION | |
| 8 | HB1-4298-000 | | 2 | SUPPORT, SEPARATION PAD | |
| 9 | HS5-2198-000 | | 1 | SPRING, COMPRESSION | |
| 10 | HB1-4289-000 | | 1 | MOUNT, SHAFT | |
| 11 | HS5-1044-000 | | 2 | BUSHING | |
| 12 | HB1-1886-020 | | 1 | ARM, LIFTING | |
| 13 | HB1-1885-000 | | 1 | LEVER, LIFTING | |
| 14 | HS5-2197-000 | | 1 | SPRING, COMPRESSION | |
| 15 | HG5-2223-000 | | 1 | MODULAR BOARD ASS'Y | EC UK GER FRN |
| | HG5-2233-000 | | 1 | MODULAR BOARD ASS'Y | AUS AE |
| 16 | WC4-5052-000 | | 1 | MICRO SWITCH | |
| 17 | HH2-2992-000 | | 1 | CABLE WITH CONNECTOR, 2P | |
| 18 | HB1-4291-000 | | 1 | COVER, BOTTOM | |
| 19 | RB1-2152-000 | | 1 | ROLLER, ARM | |
| 20 | QB1-3593-000 | | 2 | FOOT, PRINTER | |
| 21 | HB1-4368-000 | | 1 | COVER, SENSOR | |
| 22 | HB1-4361-000 | | 5 | SPACER | |
| 23 | XB4-7300-807 | | 2 | SCREW, TAP TIGHT, BINDING HEAD | |
| 24 | XB4-7401-007 | | 3 | SCREW, PAN HEAD SELF-TAPPING | |
| 25 | XB4-7402-009 | | 2 | SCREW, SELF-TAPPING, M4X20 | |
| 26 | XB6-7300-607 | | 1 | SCREW, TP, M3X6 | |
| 27 | XB6-7301-205 | | 2 | SCREW, TP, M3X12 | |
| 28 | XB4-7401-209 | | 2 | SCREW, BINDING HEAD, SELF-TPG | |
| 29 | WT2-5034-000 | | 1 | BUSHING | |
| 30 | WT2-0317-000 | | 1 | CLIP, CABLE | |

# FIGURE 8 READING ASS'Y 1

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 8 - 1 | HB1-4327-000 | | 1 | GUIDE, DOCUMENT FEED,LEFT | |
| 2 | HB1-4328-000 | | 1 | GUIDE, DOCUMENT FEED,RIGHT | |
| 3 | HS5-2141-020 | | 1 | SPRING, SLIDER | |
| 4 | HB1-2883-000 | | 2 | SLIDER, RACK | |
| 5 | HS5-0238-020 | | 1 | GEAR, Z16 | |
| 6 | HB1-4335-000 | | 1 | COVER, GEAR | |
| 7 | HB1-4330-000 | | 1 | GUIDE, PAPER EJECT | |
| 8 | HB1-4362-000 | | 2 | SHEET | |
| 9 | HB1-4323-000 | | 1 | COVER, FRONT | |
| 10 | HB1-4325-000 | | 1 | LEVER, ADF RELEASE | |
| 11 | HB1-4324-000 | | 1 | DUCT, AIR | |
| 12 | HB1-4322-000 | | 1 | COVER, GEAR | |
| 13 | XB4-7300-807 | | 1 | SCREW, TAP TIGHT, BINDING HEAD | |
| 14 | WT8-0053-000 | | 4 | REVET | |
| 15 | HB1-4329-000 | | 1 | COVER, DOCUMENT | |
| 16 | XB4-7301-009 | | 6 | SCREW, BINDING HEAD SELF-TPG | |

# **FIGURE 9** READING ASS'Y 2

See page 5-5
(FIGURE 9-a)

2

1

| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 9 - 1 | HB1-4321-000 | | 1 | COVER, DOCUMENT GUIDE,LOWER | |
| 2 | HB1-2867-000 | | 1 | STOPPER, OPERATION PANEL | |

# FIGURE 10  OPERATION PANEL ASS'Y & ADF UPPER

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 10 -1 | HB1-4373-000 | | 1 | COVER, ONE TOUCH DAIL | |
| 2 | HG5-2232-000 | | 1 | OPERATION PANEL UNIT | |
| 3 | HB1-4371-000 | | 1 | SHEET, OPERATION PANEL | UK AUS AE |
| | HB1-4376-000 | | 1 | SHEET, OPERATION PANEL | GER |
| | HB1-4378-000 | | 1 | SHEET, OPERATION PANEL | FRN |
| 4 | HB1-4372-000 | | 1 | SHEET, FUNCTION | UK AUS AE |
| | HB1-4377-000 | | 1 | SHEET, FUNCTION | GER |
| | HB1-4379-000 | | 1 | SHEET, FUNCTION | FRN |
| 5 | HB1-4318-000 | | 1 | HOLDER, SENSOR | |
| 6 | HH2-2978-000 | | 1 | CABLE WITH CONNECTOR, 3P | |
| 7 | WG8-5362-000 | | 1 | IC, TLP1241, PHOTO-INTERRUPTER | |
| 8 | HG5-1308-000 | | 1 | SEPARATION GUIDE ASS'Y | |
| 9 | HS5-2078-000 | | 1 | SPRING | |
| 10 | HB1-4311-000 | | 1 | ARM, DETECTION (DS) | |
| 11 | HB1-4317-000 | | 1 | STOPPER, DOCUMENT | |
| 12 | HB1-4309-000 | | 1 | FRAME, ADF UPPER | |
| 13 | HB1-2866-000 | | 2 | PLATE, PRESSURE | |
| 14 | HS5-2199-000 | | 1 | PLATE, PRESSURE | |
| 15 | HF5-0399-000 | | 1 | WHITE SHEET UNIT | |
| 16 | HS5-2129-000 | | 3 | SPRING, WHITE SHEET | |
| 17 | HB1-4365-000 | | 1 | SHEET, BRUSH, STATIC DISCHARGE | |
| 18 | HB1-4072-000 | | 1 | BRUSH, STATIC DISCHARGE | |
| 19 | HB1-4313-000 | | 2 | GUIDE, DOCUMENT EJECT | |
| 20 | HS5-6069-000 | | 1 | ROLLER, DELIVERY | |
| 21 | HB1-4314-000 | | 1 | LEVER, DOCUMENT RELEASE | |
| 22 | HB1-4315-000 | | 1 | CLAW, DOCUMENT RELEASE | |
| 23 | HS5-2200-000 | | 1 | SPRING | |
| 24 | HH2-2958-000 | | 1 | WIRE, GROUNDING | |
| 25 | HB1-2864-000 | | 1 | ROLLER, BACK UP | |
| 26 | HS5-6023-030 | | 1 | ROLLER, BACK UP | |
| 27 | HB1-4310-000 | | 1 | ARM, DETECTION (DES) | |
| 28 | HH2-2966-000 | | 1 | WIRE, GROUNDING | |
| 29 | HH2-2953-000 | | 1 | CABLE WITH CONNECTOR, 6P | |
| 30 | XB4-7300-807 | | 6 | SCREW, TAP TIGHT, BINDING HEAD | |
| 31 | XA9-0476-000 | | 1 | SCREW, TP M3X8 | |

# FIGURE 11  ADF LOWER



*=Lubrication
See page 4-1
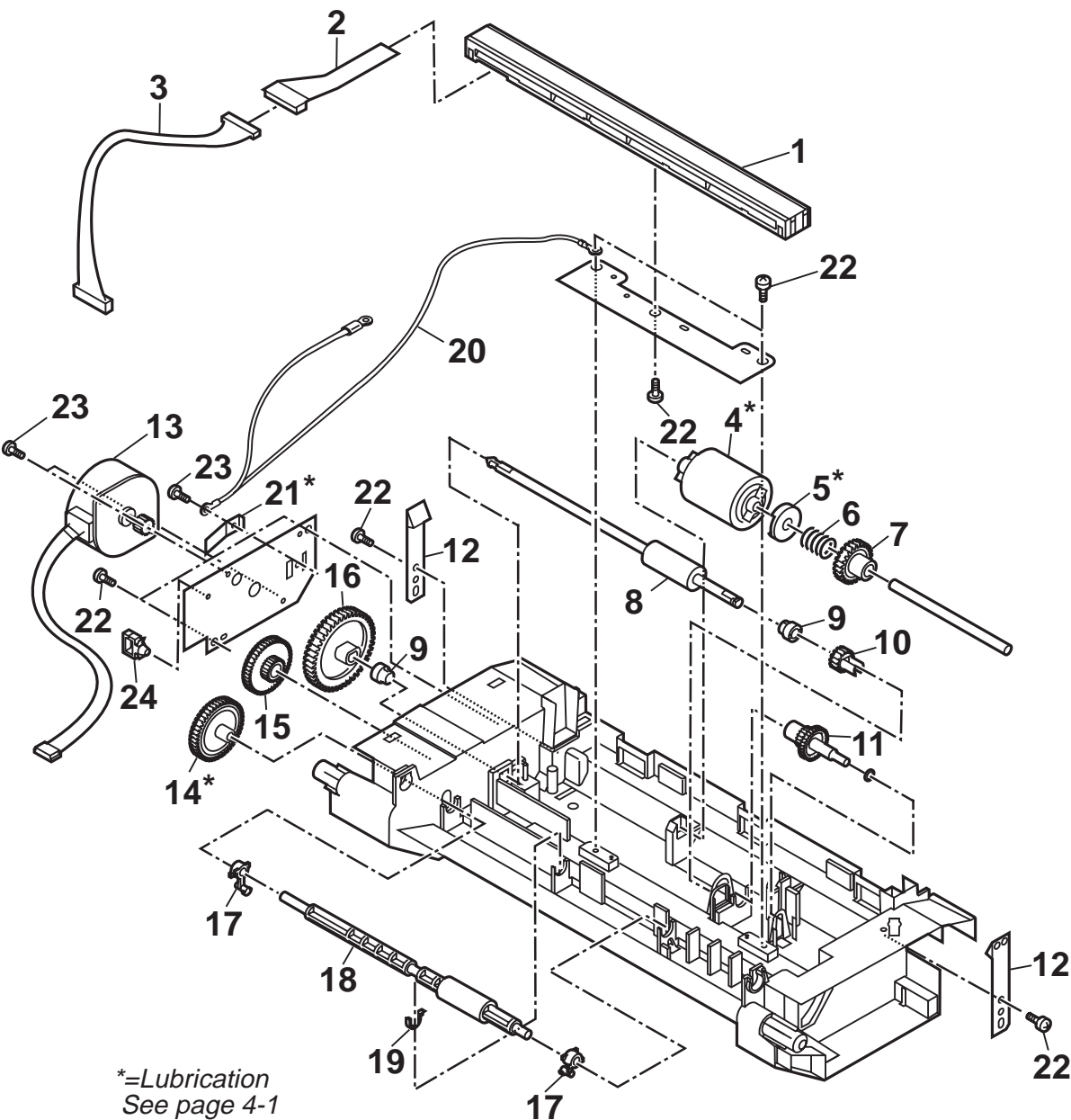
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 11 -1 | HH7-2424-000 | | 1 | CONTACT SENSOR UNIT | |
| 2 | HH2-2961-000 | | 1 | CABLE, FLAT, 12P | |
| 3 | HH2-2960-000 | | 1 | CABLE WITH CONNECTOR, 9P | |
| 4 | HB1-3697-000 | | 1 | ROLLER, SEPARATION | |
| 5 | HB1-1779-000 | | 1 | SPACER | |
| 6 | HS5-2077-000 | | 1 | SPRING, CLUTCH | |
| 7 | HS5-0314-000 | | 1 | GEAR, Z40D | |
| 8 | HB1-4307-000 | | 1 | ROLLER, DOCUMENT FEED | |
| 9 | HS1-1063-000 | | 2 | BUSHING | |
| 10 | HS5-0315-000 | | 1 | GEAR, Z21D | |
| 11 | HS5-0316-000 | | 1 | GEAR, Z21/28B | |
| 12 | HF5-0544-000 | | 2 | LOCK, OPERATION PANEL | |
| 13 | HH7-2419-000 | | 1 | MOTOR, DOCUMENT FEED | |
| 14 | HS5-0312-000 | | 1 | GEAR, Z59D | |
| 15 | HS5-0313-000 | | 1 | GEAR, Z21/Z54 | |
| 16 | HS5-0311-000 | | 1 | GEAR, Z82D | |
| 17 | HS5-1091-000 | | 2 | BUSHING | |
| 18 | HF5-0543-000 | | 1 | ROLLER, DOCUMENT EJECT | |
| 19 | HS5-1090-000 | | 1 | BUSHING | |
| 20 | HH2-2965-000 | | 1 | WIRE, GROUNDING | |
| 21 | HB1-3036-000 | | 1 | PLATE, GROUNDING | |
| 22 | XB4-7300-807 | | 7 | SCREW, TAP TIGHT, BINDING HEAD | |
| 23 | XB1-2300-407 | | 3 | SCREW, BH3X4 (S) | |
| 24 | WT2-0317-000 | | 1 | CLIP, CABLE | |

# FIGURE 12 SCANNER ASS'Y

14

15

14

3

2

14

18

1

*See page 5-5*
*(FIGURE 12-b)*

4

*See page 5-5*
*(FIGURE 12-a)*

5

*See page 5-6*
*(FIGURE 12-c)*

12 6

17

6

7

8

9

10

9

11

16

*See FIGURE 18*
*for disassembly*

*See page 5-6*
*(FIGURE 12-d)*

13

**2-23**
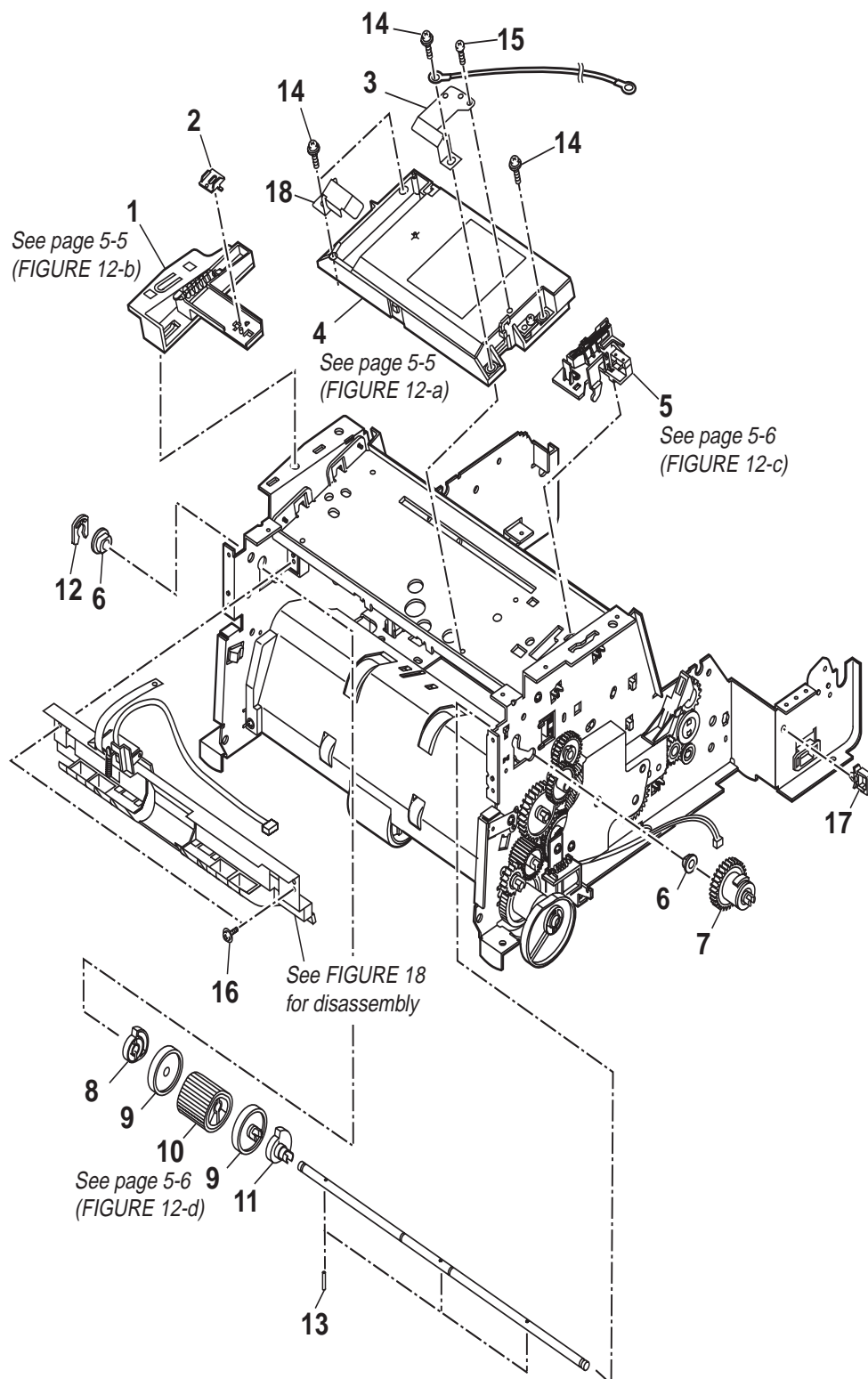
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 12 -1 | HG5-2180-000 | | 1 | ACTUATOR UNIT | |
| 2 | HB1-3018-000 | | 1 | STOPPER, TAPE | |
| 3 | HB1-3418-000 | | 1 | SPRING, GROUNDING | |
| 4 | RG9-1281-000 | | 1 | SCANNER ASS'Y | |
| 5 | RG5-3453-000 | | 1 | SWITCH LEVER ASS'Y | |
| 6 | HS5-1042-000 | | 2 | BUSH | |
| 7 | HB1-4285-000 | | 1 | CLUTCH, PAPER PICK-UP | |
| 8 | RB1-7193-000 | | 1 | CAM, LEFT | |
| 9 | HS5-6068-000 | | 2 | ROLLER, SUB | |
| 10 | HF5-0547-000 | | 1 | PICK-UP ROLLER UNIT | |
| 11 | RB1-7194-000 | | 1 | CAM, RIGHT | |
| 12 | FA3-8727-000 | | 1 | RETAINING RING | |
| 13 | XD9-0159-000 | | 3 | PIN, DOWEL | |
| 14 | XB6-7300-807 | | 4 | SCREW, TP, M3X8 | |
| 15 | XB4-7300-807 | | 1 | SCREW, TAP TIGHT, BINDING HEAD | |
| 16 | XB3-6300-800 | | 2 | SCREW, RS, M3X8 | |
| 17 | WT2-0317-000 | | 1 | CLIP, CABLE | |
| 18 | HB1-4370-000 | | 1 | PLATE, SCANNER | |

# FIGURE 13  PAPER FEED SECTION

| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 13 -1 | HH7-2415-000 | | 1 | SOLENOID | |
| 2 | HS5-0310-000 | | 1 | GEAR, Z18 | |
| 3 | HG5-2186-000 | | 1 | CAM UNIT | |
| 4 | XD9-0108-000 | | 1 | PIN, DOWEL | |
| 5 | HS5-1089-000 | | 2 | BUSHING | |
| 6 | FA3-8727-000 | | 2 | RETAINING RING | |
| 7 | HB1-4283-000 | | 1 | ROLLER, FEED | |
| 8 | HB1-4286-000 | | 1 | CLUTCH | |
| 9 | HB1-4282-000 | | 1 | ROLLER, PICK-UP | |
| 10 | XD2-1100-642 | | 1 | RING, E | |
| 11 | HB1-4284-000 | | 1 | PLATE, PAPER GUIDE | |
| 12 | HB1-4279-000 | | 1 | GUIDE, PAPER FEED | |
| 13 | RB1-7172-000 | | 1 | SPRING, GROUNDING | |
| 14 | HH2-2957-000 | | 1 | CABLE WITH CONNECTOR, 9P | |
| 15 | HB1-1867-000 | | 1 | ARM, DETECTION (PES) | |
| 16 | RB1-7205-000 | | 1 | SPRING, TORSION | |
| 17 | HB1-1868-020 | | 1 | HOLDER, PES | |
| 18 | WG8-5362-000 | | 1 | IC, TLP1241, PHOTO-INTERRUPTER | |
| 19 | WT2-0434-000 | | 1 | CLIP | |
| 20 | HS5-1042-000 | | 2 | BUSH | |
| 21 | HS5-9012-000 | | 2 | SCREW, TAP M3X6 | |
| 22 | FA4-1159-000 | | 3 | RETAINING RING | |
| 23 | XB1-2300-807 | | 1 | SCREW, CROSS-RECESS, FCH | |
| 24 | HB1-4384-000 | | 1 | SHEET | |

# FIGURE 14 DRIVE GEARS



*=Lubrication
See page 4-2

See page 5-6
(FIGURE 14-a)
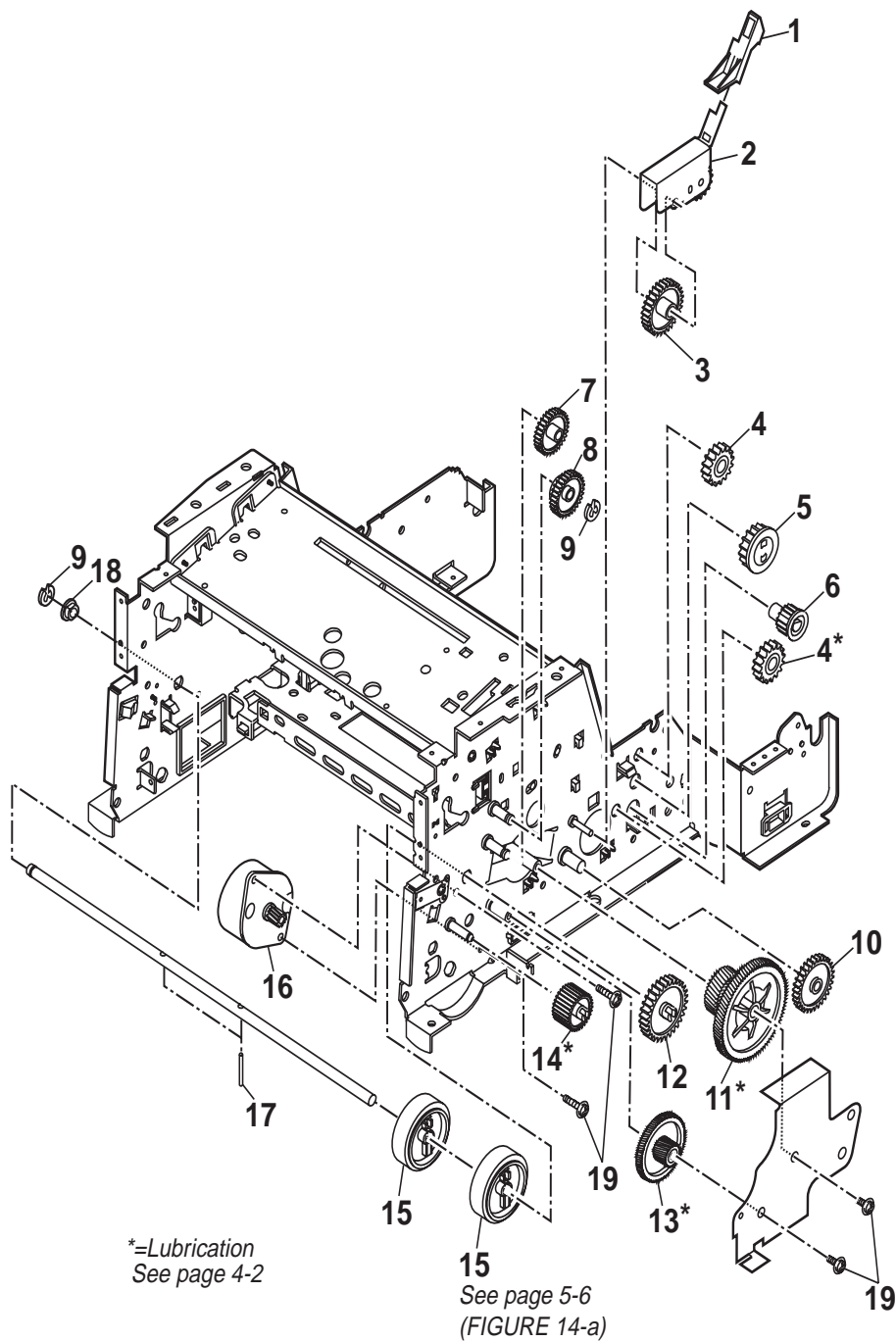
| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 14 -1 | RB1-8170-000 | | 1 | LEVER, RELEASE, D | |
| 2 | RF5-1513-000 | | 1 | ARM, SWING | |
| 3 | RS5-0791-000 | | 1 | GEAR, 36T | |
| 4 | RS5-0793-000 | | 2 | GEAR, 22T | |
| 5 | RS5-0794-000 | | 1 | GEAR, 24T | |
| 6 | RS5-0798-000 | | 1 | GEAR, 15T | |
| 7 | RS5-0789-000 | | 1 | GEAR, 37T | |
| 8 | RS5-0799-000 | | 1 | GEAR, 51T/17T | |
| 9 | FA3-8727-000 | | 2 | RETAINING RING | |
| 10 | RS5-0790-000 | | 1 | GEAR, 54T/19T | |
| 11 | RS5-0788-000 | | 1 | GEAR, 32T/93T | |
| 12 | HS5-0148-000 | | 1 | GEAR, Z47 | |
| 13 | RS6-0380-000 | | 1 | GEAR, 23T/98T | |
| 14 | HS5-0317-000 | | 1 | GEAR, Z28 | |
| 15 | HB1-4277-000 | | 2 | ROLLER, FEED | |
| 16 | HH7-2422-000 | | 1 | MOTOR, MAIN | |
| 17 | XD9-0121-000 | | 2 | PIN, DOWEL | |
| 18 | HS5-1042-000 | | 1 | BUSH | |
| 19 | XB6-7300-807 | | 4 | SCREW, TP, M3X8 | |

# FIGURE 15  FIXING SECTION 1



*See page 5-6*
*(FIGURE 15-a)*

*See FIGURE 19*
*for disassembly*

*See page 5-7*
*(FIGURE 15-b)*

**1**
*See page 5-7*
*(FIGURE 15-c)*

**4***See page 5-7*
*(FIGURE 15-d)*

*=Lubrication*
*See page 4-3*
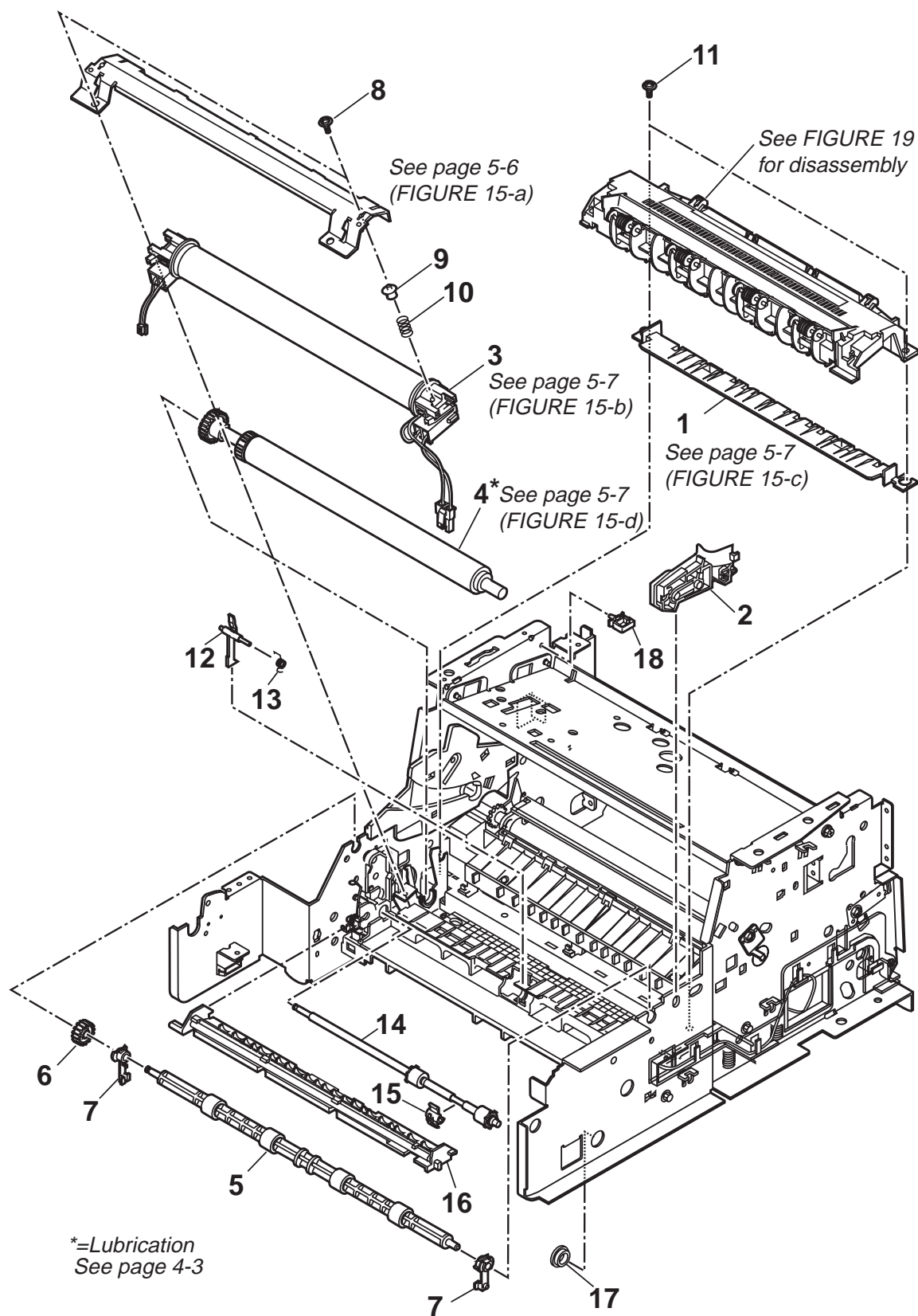
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 15 -1 | RB1-7247-000 | | 1 | GUIDE, PAPER | |
| 2 | RB1-7341-030 | | 1 | GUIDE, SUB, CARTRIDGE, RIGHT | |
| 3 | RG5-3463-000 | | 1 | FIXING ASS'Y | |
| 4 | RF5-2364-000 | | 1 | ROLLER, PRESSURE | |
| 5 | RF5-2367-000 | | 1 | ROLLER, FEEDER | |
| 6 | RS5-0797-000 | | 1 | GEAR, 18T | |
| 7 | RB1-7288-020 | | 2 | BUSHING | |
| 8 | XB6-7300-807 | | 2 | SCREW, TP, M3X8 | |
| 9 | RB1-7257-000 | | 2 | BUSHING, SPRING | |
| 10 | RS5-2508-000 | | 2 | SPRING, COMPRESSION | |
| 11 | XB3-6300-800 | | 2 | SCREW, RS, M3X8 | |
| 12 | RB1-7293-030 | | 1 | LEVER, SENSOR | |
| 13 | RB1-7294-000 | | 1 | SPRING, TORSION | |
| 14 | RF5-2368-000 | | 1 | ROLLER, FACE UP | |
| 15 | RB2-1690-000 | | 1 | BUSHING | |
| 16 | RG5-3476-030 | | 1 | FLAPPER | |
| 17 | WT2-5034-000 | | 1 | BUSHING | |
| 18 | WT2-0317-000 | | 1 | CLIP, CABLE | |

# FIGURE 16  FIXING SECTION 2
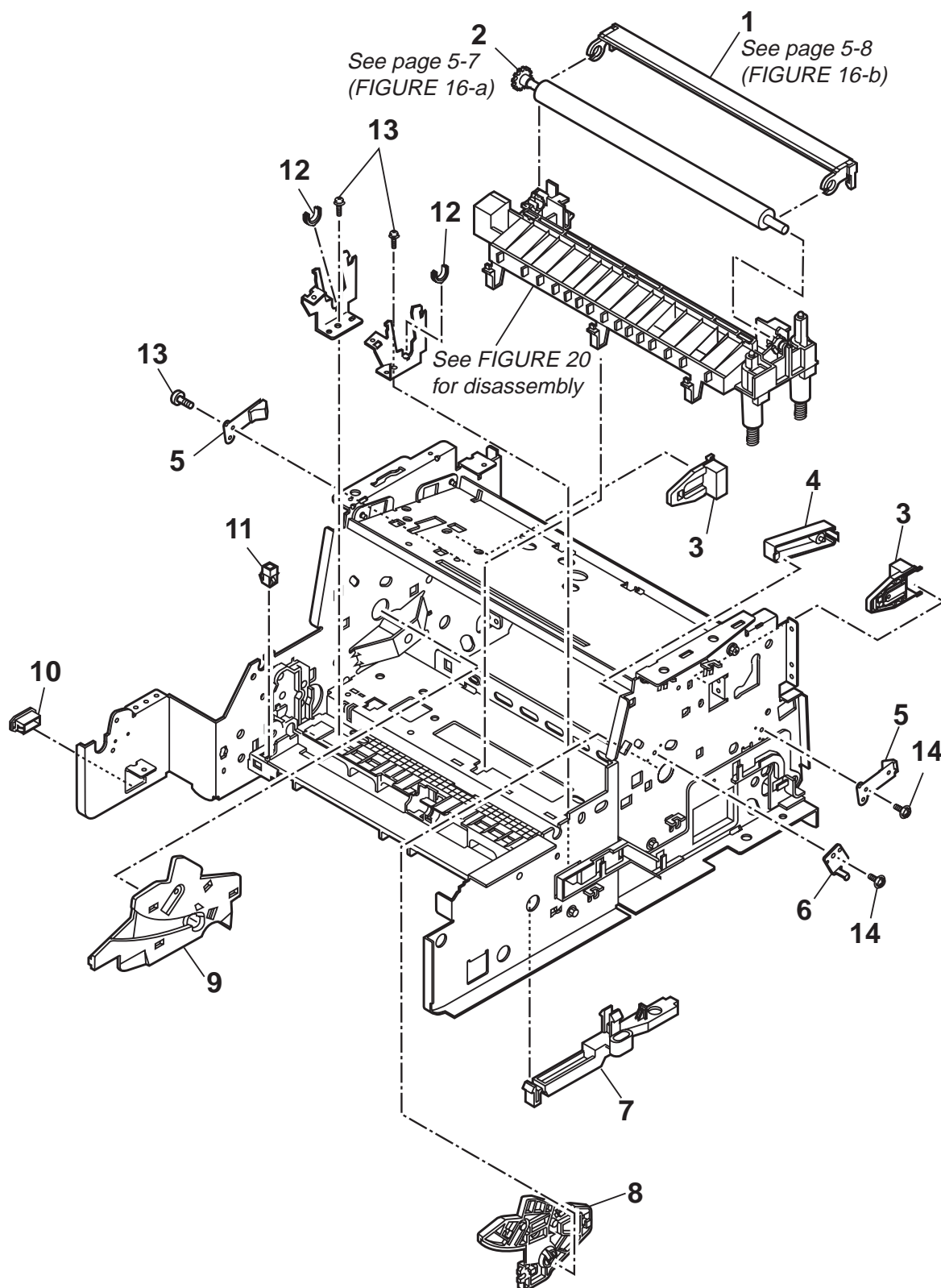
| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 16 -1 | RF5-2358-000 | | 1 | GUIDE, TRANSFER | |
| 2 | RF5-1534-000 | | 1 | ROLLER, TRANSFER | |
| 3 | HB1-4287-000 | | 2 | STOPPER, CARTRIDGE | |
| 4 | HB1-1848-000 | | 1 | STOP, CARTRIDGE | |
| 5 | HF5-0540-000 | | 2 | LOCK, RELEASE COVER | |
| 6 | RB1-7129-000 | | 1 | SPRING, GROUNDING | |
| 7 | RF5-1533-000 | | 1 | PLATE, COMMUNITY | |
| 8 | RF5-1515-020 | | 1 | GUIDE, CARTRIDGE | |
| 9 | RF5-1514-020 | | 1 | GUIDE, CARTRIDGE,LEFT | |
| 10 | WT2-5062-000 | | 1 | BUSHING | |
| 11 | VS1-5057-002 | | 1 | CONNECTOR, 2P | |
| 12 | RB1-7246-000 | | 2 | BUSHING | |
| 13 | XB3-6300-800 | | 3 | SCREW, RS, M3X8 | |
| 14 | XA9-0863-000 | | 2 | SCREW, TAP M3X6 | |

# FIGURE 17  ASF ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 17 -1 | HB1-4268-000 | | 1 | ARM, PLATE,RIGHT | |
| 2 | RB1-7185-000 | | 1 | ARM, PLATE, LEFT | |
| 3 | HS5-2193-000 | | 1 | SPRING, COMPRESSION | |
| 4 | HB1-4265-000 | | 1 | PAD, SEPARATION | |
| 5 | RS5-2502-000 | | 1 | SPRING, COMPRESSION | |
| 6 | HB1-4266-000 | | 1 | ARM, DETECTION | |
| 7 | HH2-2955-000 | | 1 | CABLE WITH CONNECTOR, 3P | |
| 8 | HB1-4267-000 | | 1 | MOUNT, ARM,DETECTION | |
| 9 | WG8-5362-000 | | 1 | PHOTO-INTERRUPTER TLP1241 | |
| 10 | RB1-7206-000 | | 1 | HOLDER, ARM | |
| 11 | HF5-0541-000 | | 1 | PICK-UP FRAME UNIT | |
| 12 | HF5-0542-000 | | 1 | PLATE, MIDDLE | |
| 13 | XB4-7300-807 | | 1 | SCREW, TAP TIGHT, BINDING HEAD | |

# FIGURE 18  TONER DETECTION ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 18 -1 | HB1-4367-000 | | 1 | SHEET | |
| 2 | HB1-3012-000 | | 1 | SUPPORTER, TONER SENSOR | |
| 3 | HH7-2416-000 | | 1 | TONER SENSOR ASS'Y | |
| 4 | HB1-3011-040 | | 1 | HOLDER, TONER SENSOR | |
| 5 | HS5-2194-000 | | 1 | SPRING | |
| 6 | HB1-4271-000 | | 1 | SUPPORT, TONER SENSOR | |
| 7 | HB1-4273-000 | | 1 | GUIDE, TONER SENSOR | |
| 8 | HB1-4272-000 | | 1 | GUIDE, PAPER FEED | |
| 9 | HS5-2075-000 | | 2 | SPRING, PRESSURE | |
| 10 | HS5-6024-000 | | 2 | ROLLER, PAPER GUIDE | |
| 11 | XB4-7300-807 | | 2 | SCREW, TAP TIGHT, BINDING HEAD | |

# FIGURE 19  DELIEVRY ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 19 -1 | RG5-3478-000 | | 2 | SPUR ASS'Y | |
| 2 | RG5-3479-000 | | 2 | SPUR ASS'Y | |
| 3 | RB1-7284-020 | | 4 | ROLLER, FACE DOWN | |
| 4 | RB1-7286-000 | | 4 | SPRING, WIRE | |
| 5 | RB2-1685-000 | | 2 | ROLLER, FACE UP | |
| 6 | RB1-7287-000 | | 2 | SPRING, WIRE | |
| 7 | RS5-8543-020 | | 1 | LABEL, "WARNING HIGH TEMP" | |
| 8 | RB2-1686-000 | | 1 | FRAME | |
| 9 | RB1-7334-000 | | 1 | GUIDE, JAMMED PAPER REMOVAL | |

# FIGURE 20  TRANSFER BLOCK ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 20 - 1 | RB2-1657-000 | | 1 | ELIMINATOR, STATIC CHARGE | |
| 2 | RB2-1655-000 | | 1 | BUSHING | |
| 3 | RS5-2504-000 | | 1 | SPRING, COMPRESSION | |
| 4 | RB2-1656-000 | | 1 | BUSHING | |
| 5 | RS5-2505-000 | | 1 | SPRING, COMPRESSION | |
| 6 | RB1-7237-000 | | 1 | PIN, CONTACT | |
| 7 | RS5-2512-000 | | 2 | SPRING, COMPRESSION | |
| 8 | RB1-7236-000 | | 1 | PIN, CONTACT | |
| 9 | HB1-2580-000 | | 5 | TR SLOPE | |

# FIGURE 21  CASSETTE ASS'Y

| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 21 -1 | HF5-0545-000 | | 1 | GUIDE, PAPER WIDTH,LEFT | |
| 2 | RB2-1706-000 | | 1 | SHEET, SEPARATION | |
| 3 | HB1-4344-000 | | 1 | GUIDE, PAPER WIDTH,RIGHT | |
| 4 | HB1-4343-000 | | 1 | BODY, CASSETTE | |
| 5 | XB4-7400-807 | | 2 | SCREW,TAPPING,TRUSS HEAD,M4X8 | |

# FIGURE 22  SCNT BOARD ASS'Y



**IC2**

**BAT1**

**JP1**
*See page 5-8*
*(FIGURE 22-a)*

**IC50**

**IC10**

**IC26**

**C11**

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 22 - BAT1 | WK1-5130-000 | | 1 | BATTERY, LITHIUM, CR2032/1HS | |
| C11 | WK1-5131-000 | | 1 | CAPACITOR, ELE, DOUBLE LAYER | |
| IC2 | HH4-3340-000 | | 1 | IC, MR27V1652D, MASK-ROM | |
| IC10 | HH4-3236-000 | | 1 | IC, HG73C051FD, GATE-ARRAY | |
| IC26 | HH4-3300-000 | | 1 | IC, UPD703102GJ-A33-024-8EU | |
| IC501 | HH4-3235-000 | | 1 | IC, MBCU34102-105, MCU | |
| JP1 | VS1-5888-002 | | 1 | CONNECTOR, PIN 2P | |

# FIGURE 23  PCNT BOARD ASS'Y

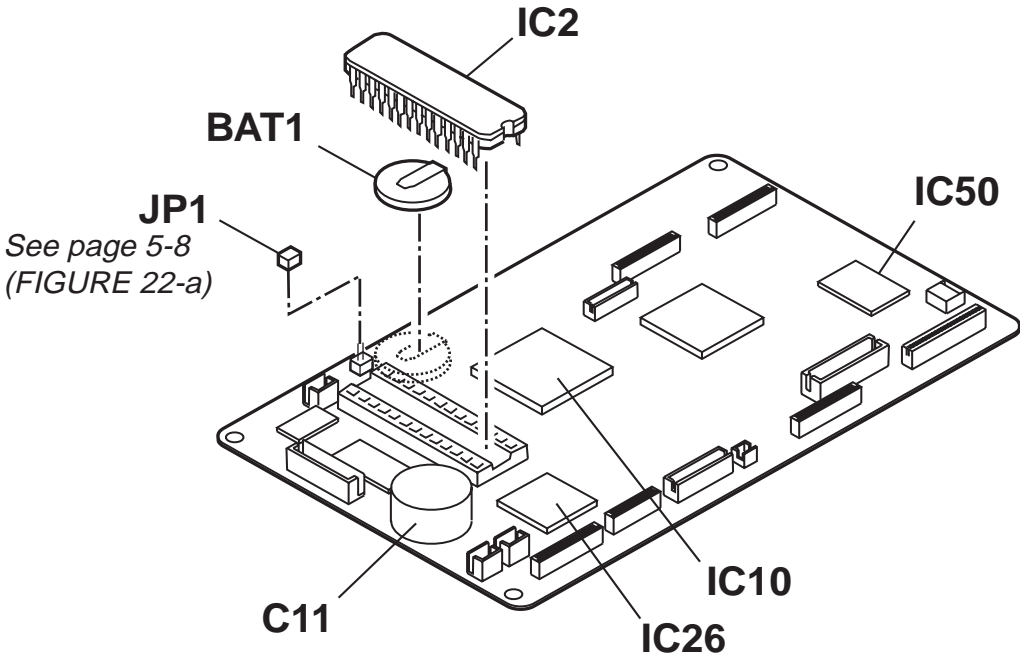| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 23 - L1 | HH3-5348-000 | | 1 | INDUCTOR | |
| R302 | RH6-3384-000 | | 1 | RESISTOR, 3MOHM, 0.5W | |
| R319 | RH6-3384-000 | | 1 | RESISTOR, 3MOHM, 0.5W | |
| R328 | RH6-3858-000 | | 1 | RESISTOR, METAL | |
| T301 | HH3-5338-000 | | 1 | TRANSFORMER, INVERTER, 22VA | |
| T302 | HH3-5337-000 | | 1 | TRANSFORMER, INVERTER, 6.3VA | |
| T303 | HH3-5336-000 | | 1 | TRANSFORMER, INVERTER, 1.5VA | |
| T304 | HH3-5336-000 | | 1 | TRANSFORMER, INVERTER, 1.5VA | |
| TB1 | HH2-2971-000 | | 1 | CABLE WITH CONNECTOR, 2P | |
| TB301 | RH2-5330-000 | | 1 | CONNECTOR, 2P | |
| TB303 | RH2-5330-000 | | 1 | CONNECTOR, 2P | |

# FIGURE 24 NCU BOARD ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 24 - IC1 | HH7-2430-000 | | 1 | IC, HFS113F022A1, HYBRID | |
| IC4 | HH7-2431-000 | | 1 | IC, H8D2965, HYBRID | |
| L51 | HH7-2240-000 | | 1 | FIXED INDUCTOR TSU-FL 474 | |
| L52 | HH7-2240-000 | | 1 | FIXED INDUCTOR TSU-FL 474 | |
| T1 | HH7-2427-000 | | 1 | TRANSFORMER, AUDIO | |

# FIGURE 25 MODULAR BOARD ASS'Y

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 25 - 1 | HH2-2969-000 | | 1 | CABLE WITH CONNECTOR, 6P | |
| 2 | HH2-2977-000 | | 1 | CABLE WITH CONNECTOR, 9P | |
| 3 | WT2-0317-000 | | 1 | CLIP, CABLE | |

# FIGURE 26  HANDSET KIT E3
## HANDSET KIT U3

The parts shown at Key No. 4
are not used with this model.

| FIGURE & KEY No. | PART No. | R A N K | Q T Y | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 26 - 1 | HH7-2408-000 | | 1 | HANDSET UNIT | EC |
| | HH7-2460-000 | | 1 | HANDSET UNIT | UK |
| 2 | HB1-1264-000 | | 1 | HOLDER, HANDSET CRADLE | EC UK |
| 3 | WT2-5465-000 | | 2 | RIVET | EC UK |
| 4 | NPN | | 2 | SCREW | |

# 3. TOOL

## FIGURE 27  TOOLS

T1

T2

T3

T4

**3-1**

3-2

| FIGURE & KEY No. | PART No. | RANK | QTY | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|
| 27 - T1 | HY9-0007-000 | | 1 | LUBE, MOLYKOTE EM-50L, GREASE | |
| T2 | CK-8006-000 | | 1 | ELECTRICITY GREASE (IF-20) | |
| T3 | CK-0451-000 | | 1 | LUBE, UNIWAY 68, OIL | |
| T4 | HY9-0022-000 | | 1 | IC-REMOVING TOOL (24-64P) | |

# 4. LUBRICATIONS

## 4.1  Locations

Some parts are lubricated with grease to ensure smooth operation and to increase conductivity. If lubricated parts are replaced or grease is removed, grease must be reapplied.

### 4.1.1 ADF LOWER

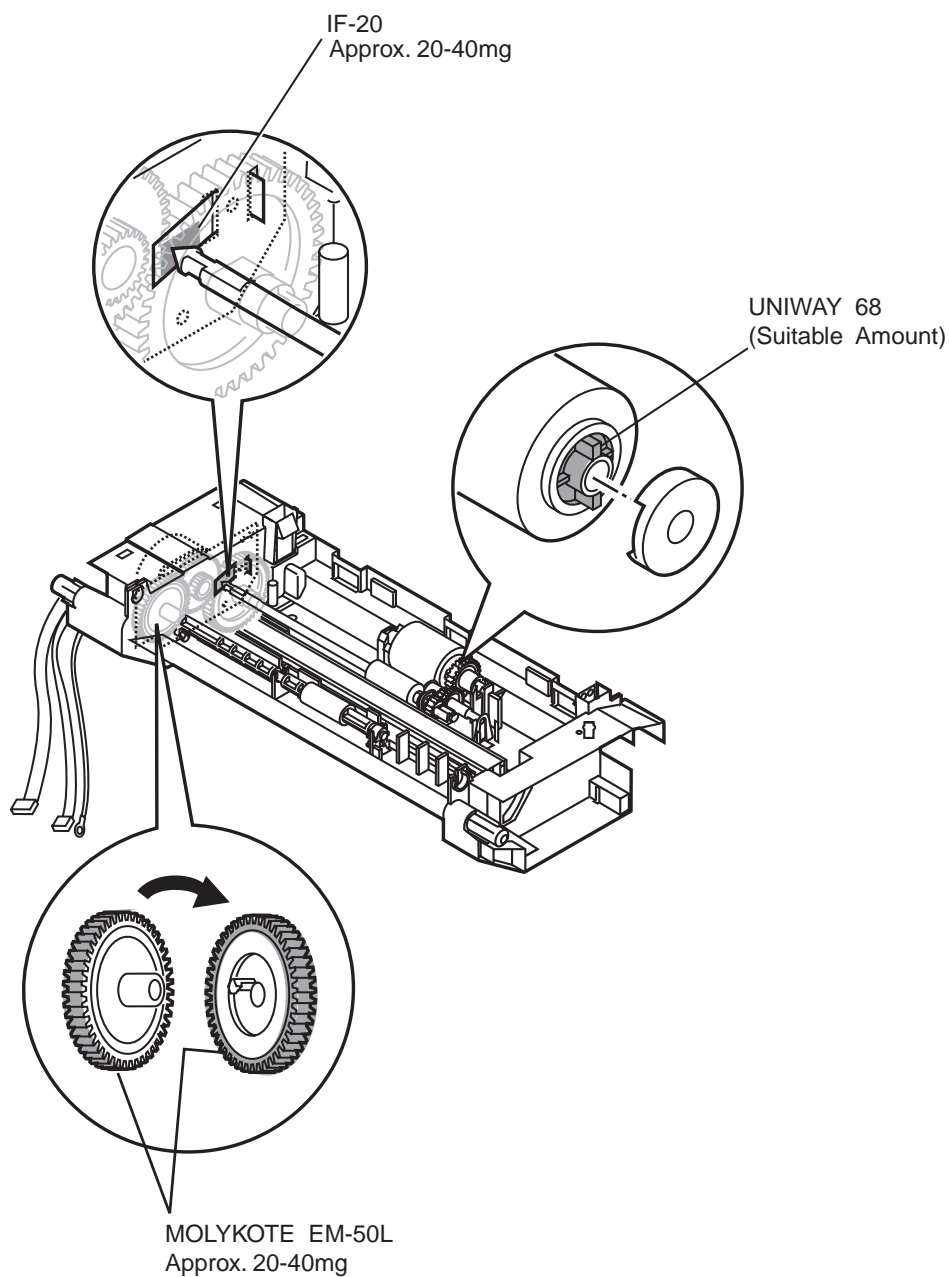

*See FIGURE 11 for the disassembly*

**4-1**

## 4.1.2 DRIVE GEARS

MOLYKOTE EM-50L
Approx . 20-30mg

MOLYKOTE EM-50L

MOLYKOTE EM-50L
Approx . 40-60mg

MOLYKOTE EM-50L
Approx . 20-30mg
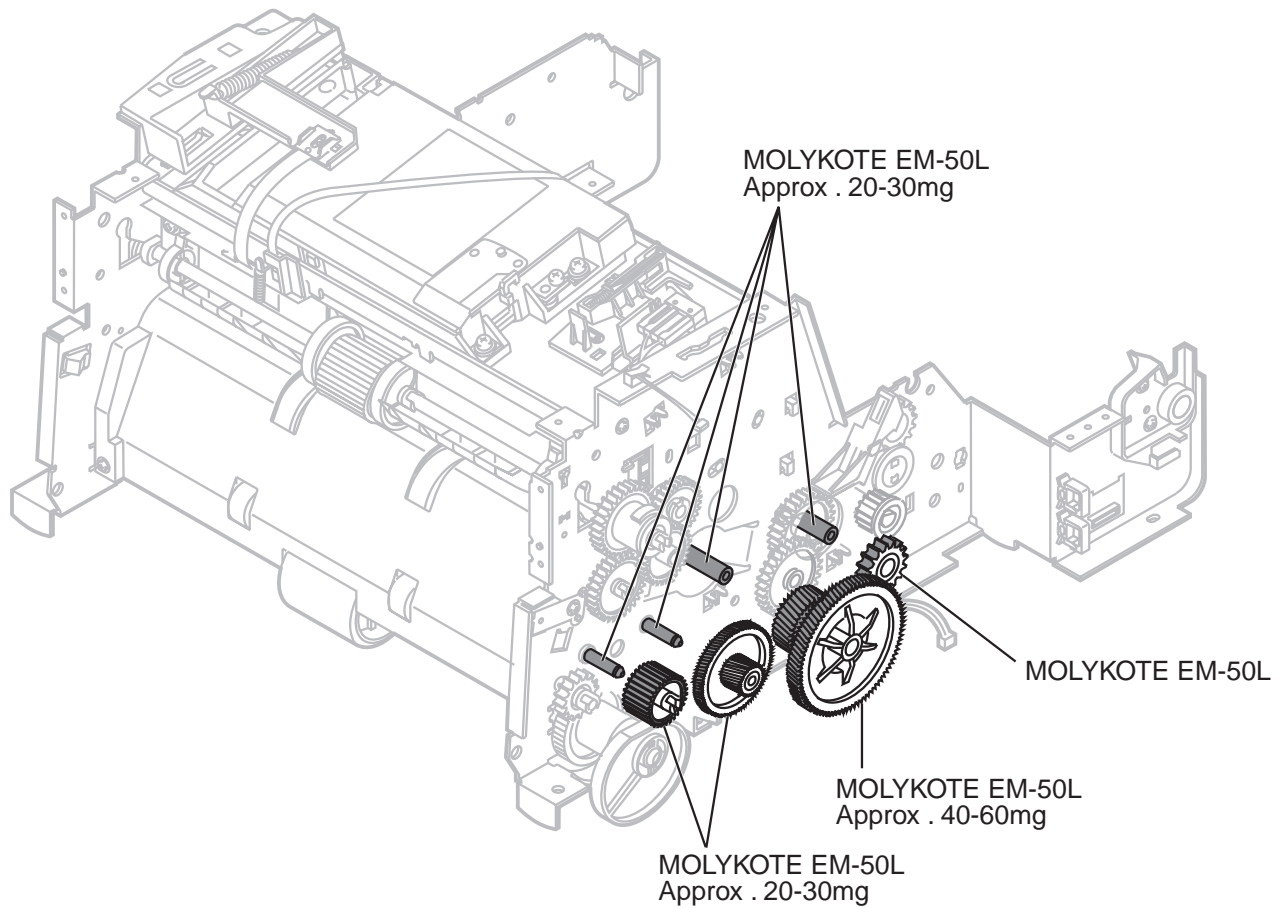
*See FIGURE 14 for the disassembly*

**4-2**

## 4.1.3 PRESSURE ROLLER & SEPARATION GUIDE ASS'Y

MOLYKOTE  EM-50L
Approx. 100mg

IF-20
Approx. 20-40mg
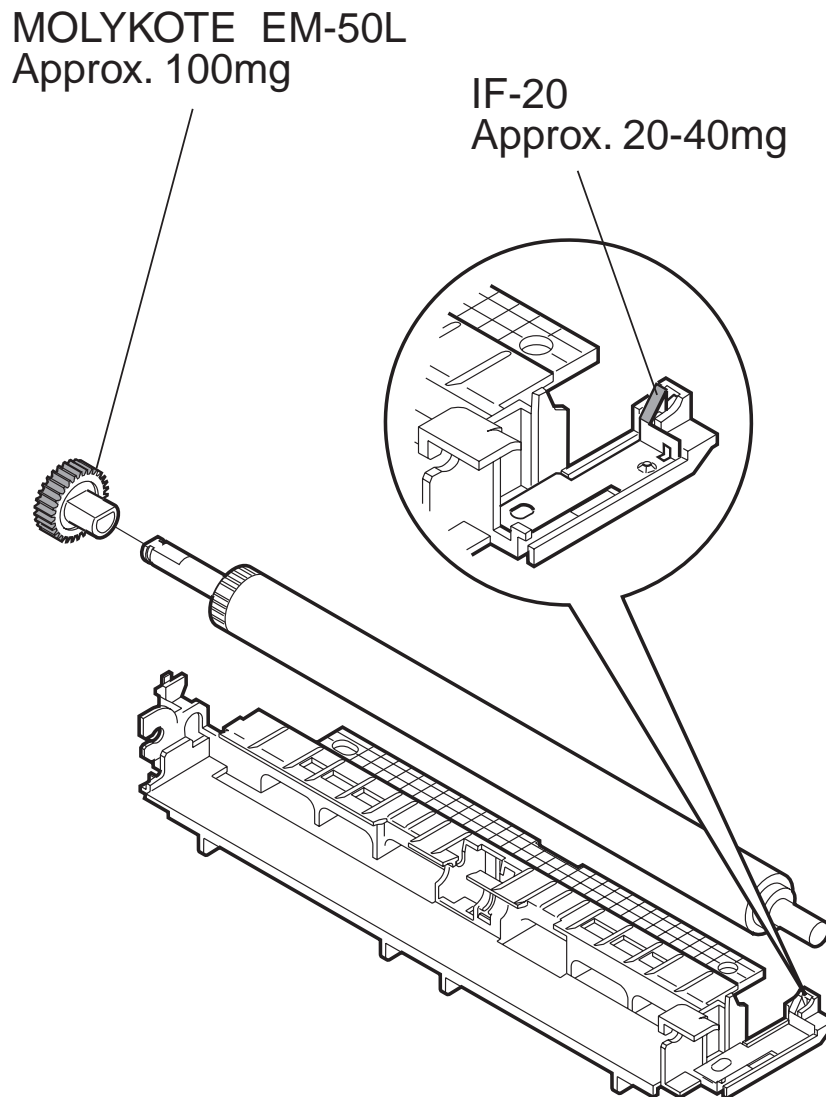
*See FIGURE 15 for the disassembly*

**4-3**

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# 5. GUIDE TO REPLACEMENT
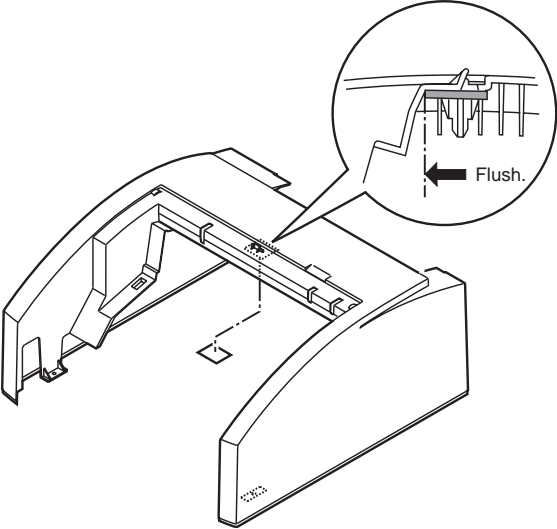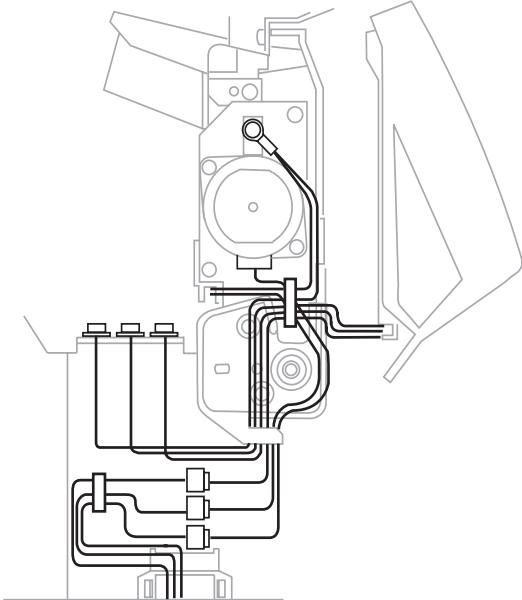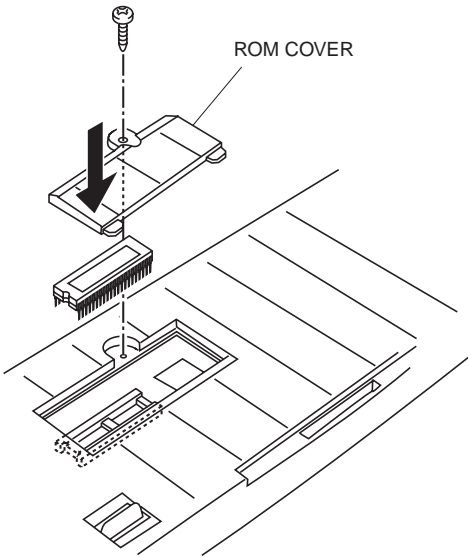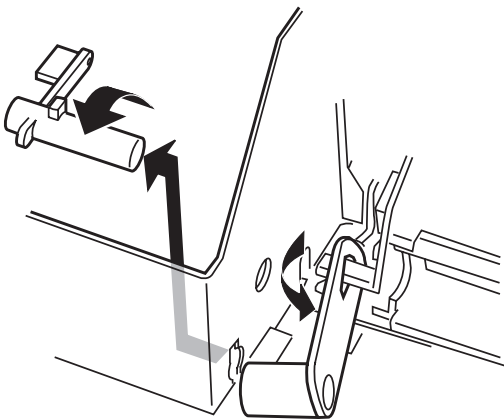
| FIGURE 2-a | See Page 2-3 | FIGURE 3-a | See Page 2-5 |
|---|---|---|---|



Flush.

Be sure to attach the sheet to the back of the front cover.



Route the cables as shown in the figure.

| FIGURE 4-a | See Page 2-7 | FIGURE 4-b | See Page 2-7 |
|---|---|---|---|



ROM COVER

The ROM is located under the ROM cover.
To remove the ROM cover, push where indicated by an arrow.



Take care when removing or mounting the lever.
To remove the lever, work as shown in the figure.

| **FIGURE 4-c** | See Page 2-7 | **FIGURE 4-d** | See Page 2-7 |
|---|---|---|---|
|   Route the cables as indicated. | |   When attaching/removing the J7 connector, hold as shown in the figure and do not put pressure on the AR2 arrester. | |
| **FIGURE 5-a** | See Page 2-9 | **FIGURE 5-b** | See Page 2-9 |
|   When lifting, be sure to hold as shown in the figure. | |   Be sure not to leave out the spring. | |
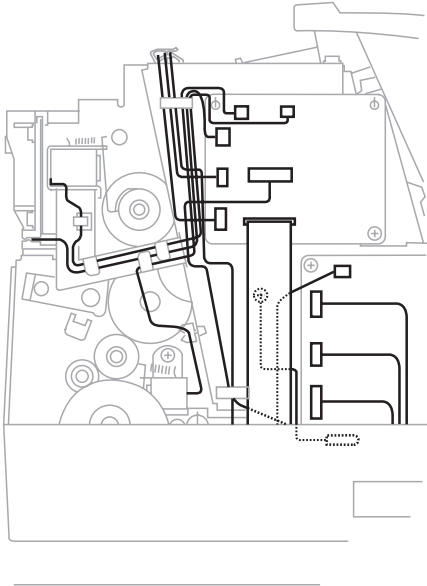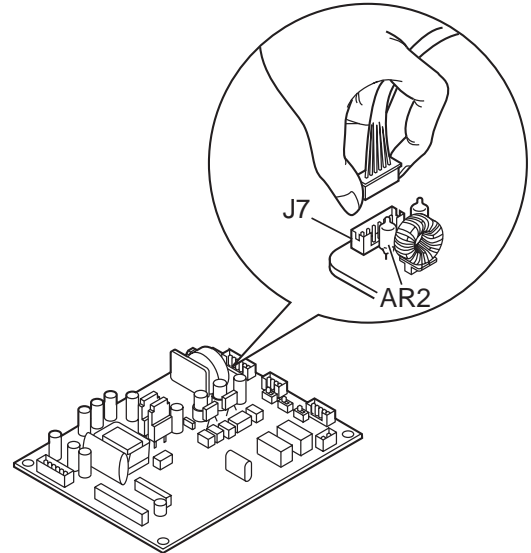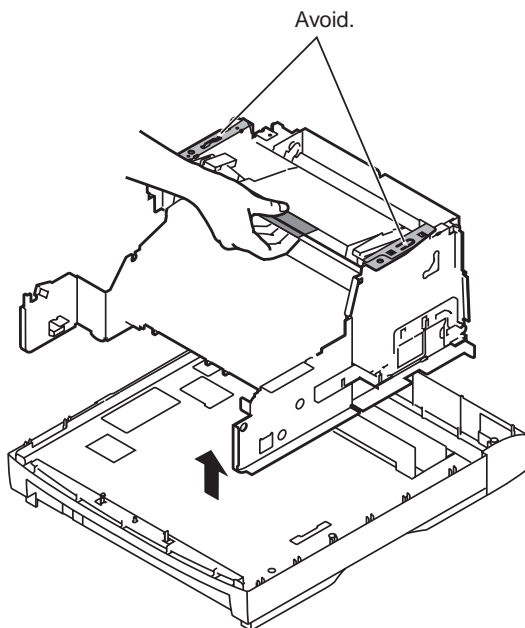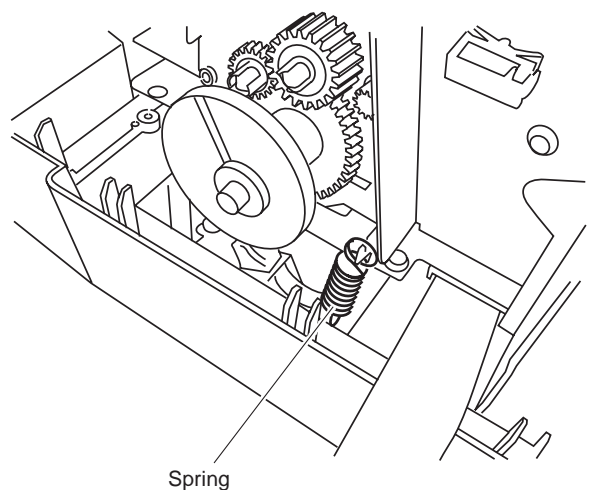
**5-2**

| FIGURE 6-a | See Page 2-11 |
|---|---|
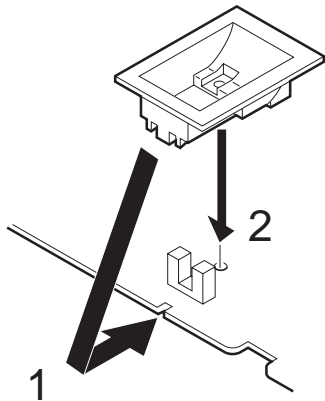


To attach the WATER PROOF COVER to the PCNT board, slide it into position (1) and press down to secure (2).

| FIGURE 6-b | See Page 2-11 |
|---|---|
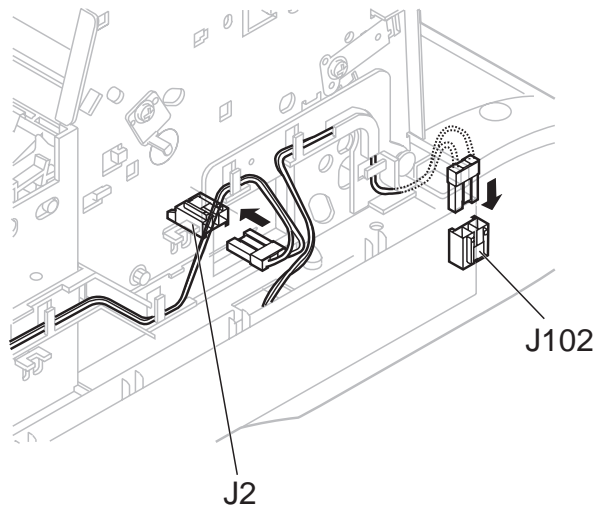


Be sure not to leave out the cable. Work as shown in the figure.

| FIGURE 6-c | See Page 2-11 |
|---|---|
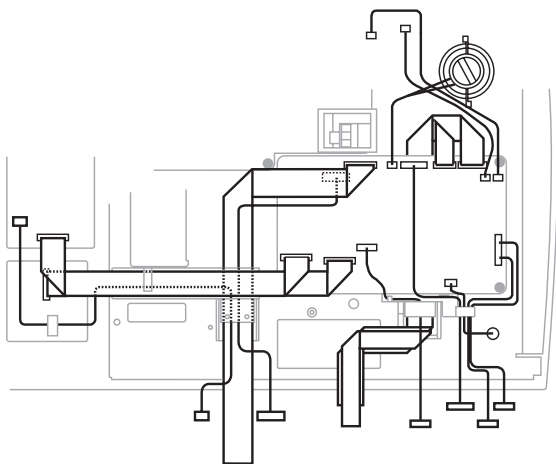


Route the cables as shown in the figure.

| FIGURE 6-d | See Page 2-11 |
|---|---|
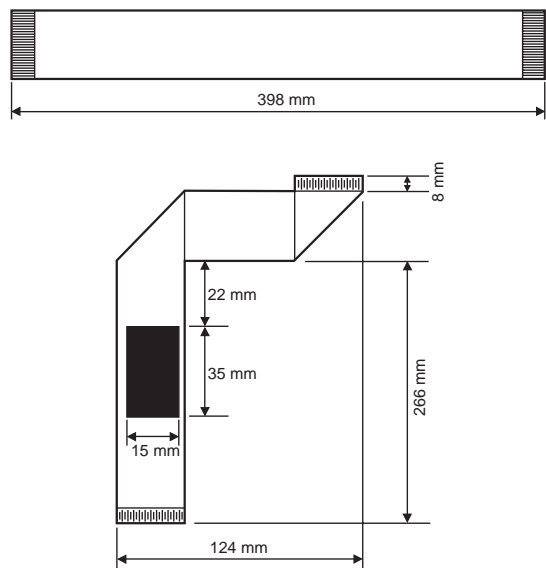


Attach double-sided adhesive tape to the underside of the shaded area ■.

Fold the flat cable as shown in the figure.

| FIGURE 6-e | See Page 2-11 | FIGURE 6-f | See Page 2-11 |
|---|---|---|---|
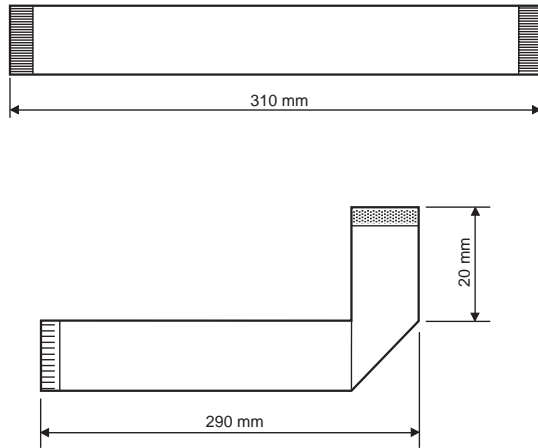
310 mm

20 mm

290 mm

Fold the flat cable as shown in the figure.

320 mm

60mm

25 mm

235 mm
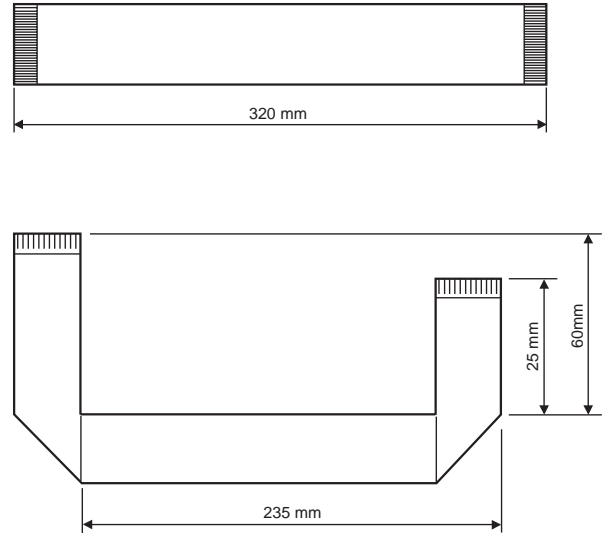
Fold the flat cable as shown in the figure.

| FIGURE 7-a | See Page 2-13 | FIGURE 7-b | See Page 2-13 |
|---|---|---|---|
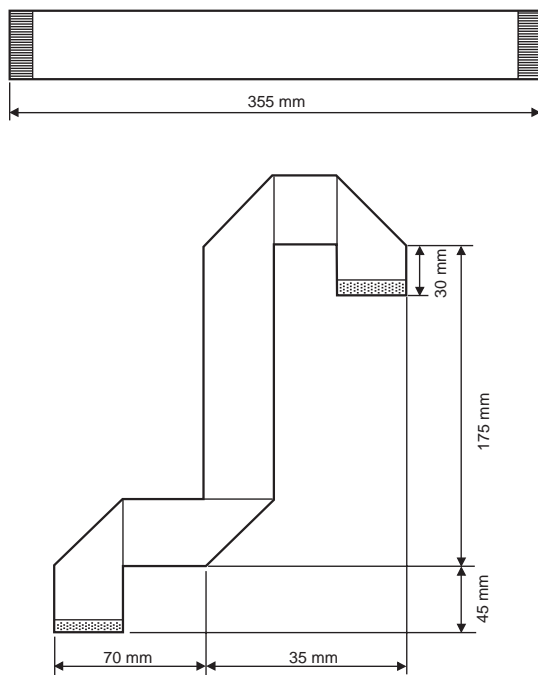
355 mm

30 mm

175 mm

45 mm

70 mm

35 mm

Fold the flat cable as shown in the figure.

362 mm

25 mm

180 mm

20 mm

70 mm

67 mm

Fold the flat cable as shown in the figure.

**5-4**
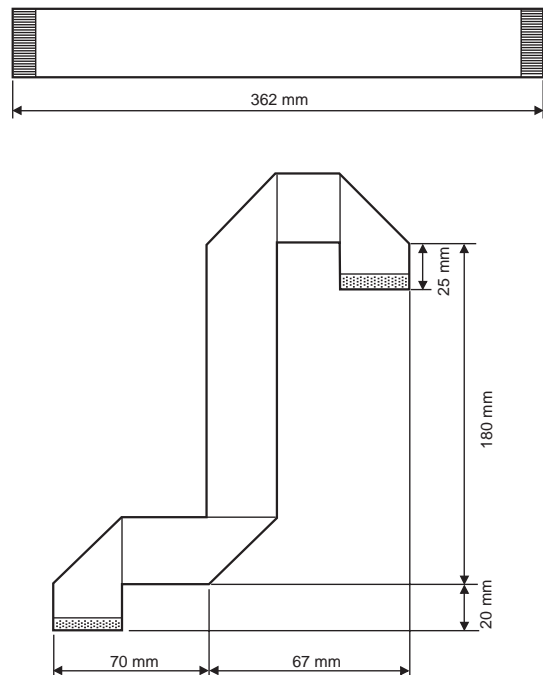
| FIGURE 7-c | See Page 2-13 |
|---|---|
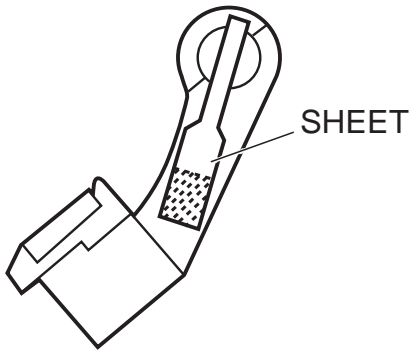


SHEET

Attach the sheet over the hole in the separation pad as shown in the figure.

| FIGURE 9-a | See Page 2-17 |
|---|---|



STOPPER

TAB
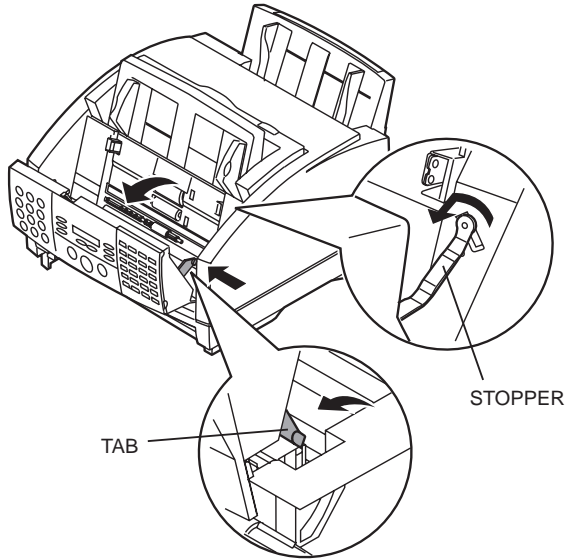
To open the control panel, turn the stopper to the left and pull out to the front, then shift the tab as shown in the figure.

| FIGURE 12-a | See Page 2-23 |
|---|---|
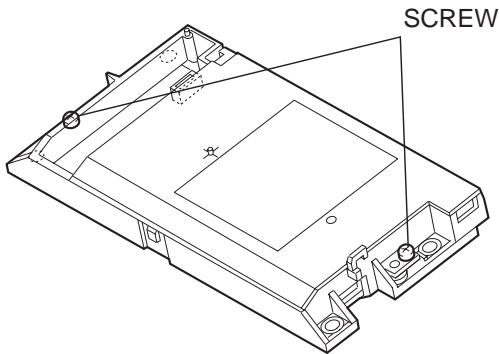


SCREW

Do not loosen or remove the two black screws on the SCANNER ASS'Y.

| FIGURE 12-b | See Page 2-23 |
|---|---|
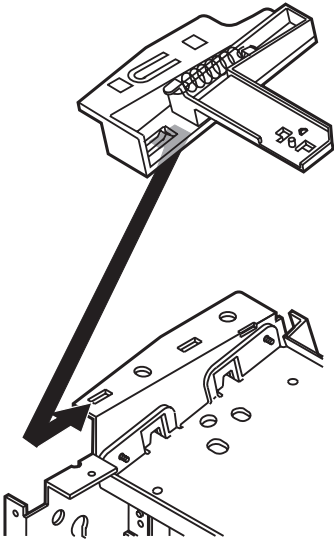


Attach the ACTUATOR BASE retaining clip to the frame as shown by the arrow.

| **FIGURE 12-c** | See Page 2-23 | **FIGURE 12-d** | See Page 2-23 |
|---|---|---|---|
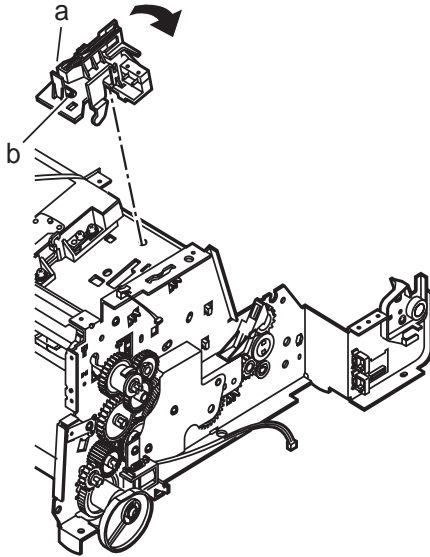


To attach the SWITCH LEVER ASS'Y: with portion (a) lifted up, and while continuing to press upward on pin (b), rotate the ass'y in the arrow's direction.
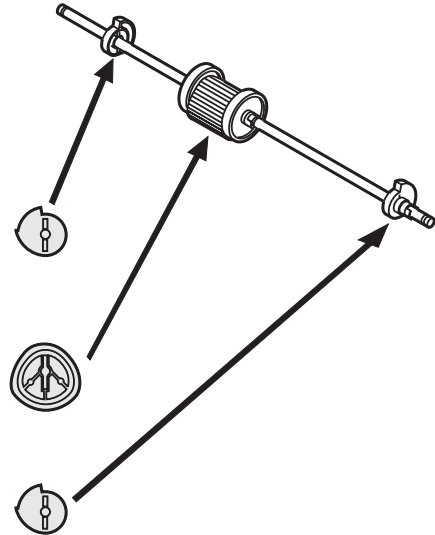


When assembling the PICKUP ROLLER ASS'Y, be careful that the cams and roller are correetiy aligned.

| **FIGURE 14-a** | See Page 2-27 | **FIGURE 15-a** | See Page 2-29 |
|---|---|---|---|
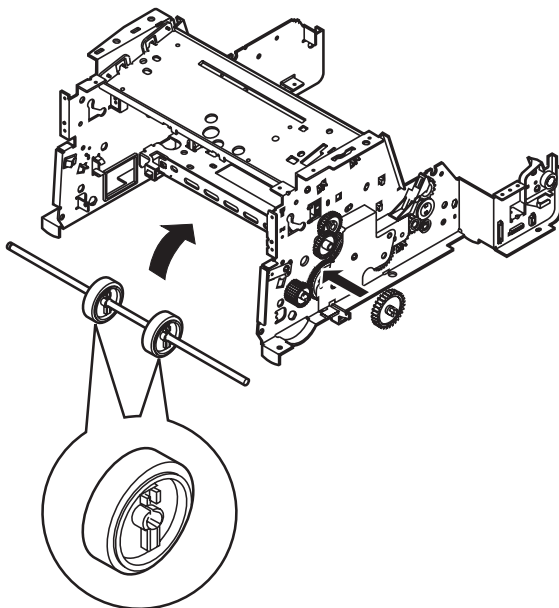


When mounting the feed roller, be sure to pay attention to its orientation.
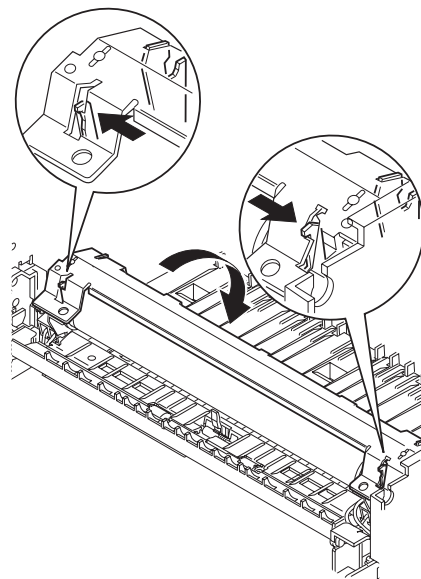


When removing the PRESSURE PLATE, use a fine screwdriver to press the clips outward and unhook them.

| FIGURE 15-b | See Page 2-29 |
|---|---|
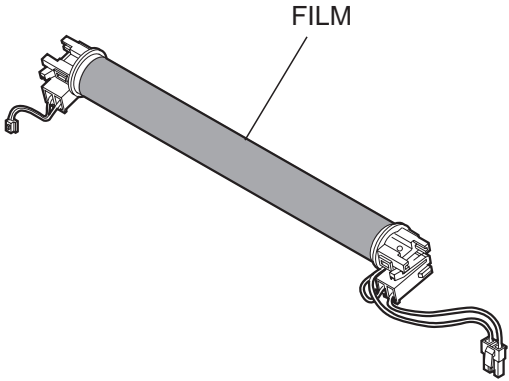
FILM

Be careful not to touch hte film on the FIXING ASS'Y with your hands.

| FIGURE 15-c | See Page 2-29 |
|---|---|
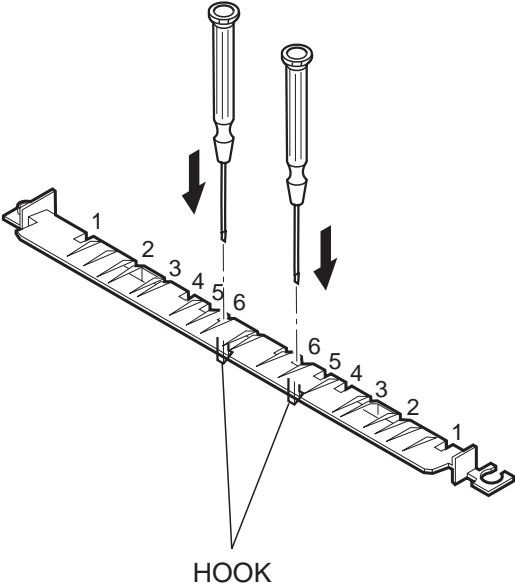
HOOK

Insert a fine screwdriver into the sixth holes from both left and right ends to unhook the retaining clips.

| FIGURE 15-d | See Page 2-29 |
|---|---|
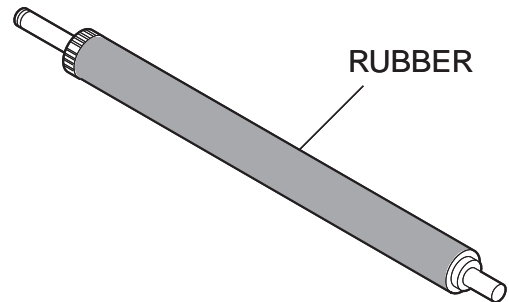
RUBBER

Do not touch the rubber portion of the PRESSURE ROLLER with your hands.

| FIGURE 16-a | See Page 2-31 |
|---|---|
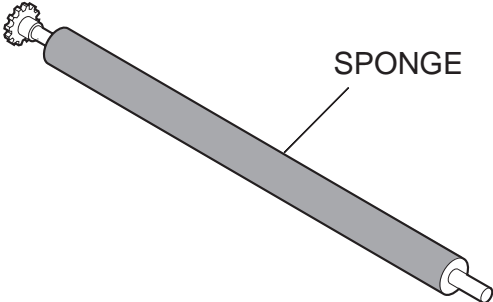
SPONGE

Do not touch the sponge portion of the TRANSFER ROLLER with your hands.

| FIGURE 16-b | See Page 2-31 | FIGURE 22-a | See Page 2-43 |
|---|---|---|---|
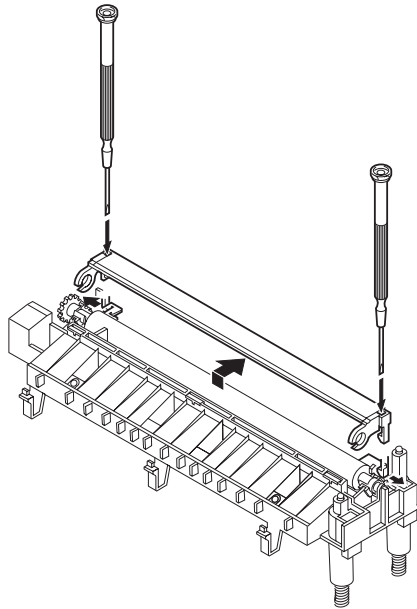
SHORT PLUG



When removing the TRANSFER GUIDE, use a fine screwdriver to unhook the retaining clips.
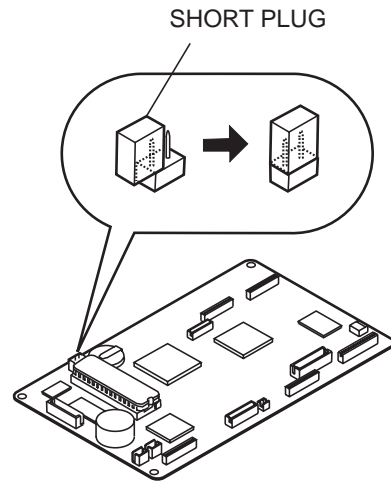


The service part version of the SCNT board has a SHORT PLUG on one of the pins. When replacing the SCNT board, cover both pins with the plug. If both pins of the SCNT board service part are already by the plug, DO NOT INSTALL THE PART; the backup battery may be significantly depleted. When installing, be careful to avoid electrostatic damage to board components.

# 6. NUMERICAL INDEX

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|
| CK-0451-000 | 27 - T3 | LUBE, UNIWAY 68, OIL |
| CK-8006-000 | 27 - T2 | ELECTRICITY GREASE (IF-20) |
| FA3-8727-000 | 12 - 12 | RETAINING RING |
|  | 13 - 6 |  |
|  | 14 - 9 |  |
| FA4-1159-000 | 13 - 22 | RETAINING RING |
| HA2-0868-000 | 1 - 10 | LABEL, MERCURY |
| HB1-1264-000 | 26 - 2 | HOLDER, HANDSET CRADLE |
| HB1-1779-000 | 11 -5 | SPACER |
| HB1-1848-000 | 16 - 4 | STOP, CARTRIDGE |
| HB1-1867-000 | 13 - 15 | ARM, DETECTION (PES) |
| HB1-1868-020 | 13 - 17 | HOLDER, PES |
| HB1-1885-000 | 7 - 13 | LEVER, LIFTING |
| HB1-1886-020 | 7 - 12 | ARM, LIFTING |
| HB1-2580-000 | 20 - 9 | TR SLOPE |
| HB1-2864-000 | 10 - 25 | ROLLER, BACK UP |
| HB1-2866-000 | 10 - 13 | PLATE, PRESSURE |
| HB1-2867-000 | 9 - 2 | STOPPER, OPERATION PANEL |
| HB1-2883-000 | 8 - 4 | SLIDER, RACK |
| HB1-3008-000 | 2 - 7 | RACK |
| HB1-3011-040 | 18 - 4 | HOLDER, TONER SENSOR |
| HB1-3012-000 | 18 - 2 | SUPPORTER, TONER SENSOR |
| HB1-3018-000 | 12 - 2 | STOPPER, TAPE |
| HB1-3023-000 | 6 - 8 | HOLDER, SPEAKER |
| HB1-3036-000 | 11 -21 | PLATE, GROUNDING |
| HB1-3418-000 | 12 - 3 | SPRING, GROUNDING |
| HB1-3697-000 | 11 -4 | ROLLER, SEPARATION |
| HB1-4072-000 | 10 - 18 | BRUSH, STATIC DISCHARGE |
| HB1-4258-000 | 4 - 15 | COVER, PAPER EJECT, FACE DOWN |
| HB1-4259-000 | 4 - 13 | ARM, OVERFLOW DETECT |
| HB1-4260-000 | 4 - 12 | COVER, OVERFLOW SENSOR |
| HB1-4261-000 | 4 - 18 | SHEET |
| HB1-4265-000 | 17 - 4 | PAD, SEPARATION |
| HB1-4266-000 | 17 - 6 | ARM, DETECTION |
| HB1-4267-000 | 17 - 8 | MOUNT, ARM,DETECTION |
| HB1-4268-000 | 17 - 1 | ARM, PLATE,RIGHT |
| HB1-4271-000 | 18 - 6 | SUPPORT, TONER SENSOR |
| HB1-4272-000 | 18 - 8 | GUIDE, PAPER FEED |
| HB1-4273-000 | 18 - 7 | GUIDE, TONER SENSOR |
| HB1-4277-000 | 14 - 15 | ROLLER, FEED |
| HB1-4279-000 | 13 - 12 | GUIDE, PAPER FEED |
| HB1-4280-000 | 5 - 4 | COVER, RELEASE |
| HB1-4281-000 | 5 - 1 | COVER, UPPER,RELEASE |
| HB1-4282-000 | 13 - 9 | ROLLER, PICK-UP |
| HB1-4283-000 | 13 - 7 | ROLLER, FEED |
| HB1-4284-000 | 13 - 11 | PLATE, PAPER GUIDE |
| HB1-4285-000 | 12 - 7 | CLUTCH, PAPER PICK-UP |
| HB1-4286-000 | 13 - 8 | CLUTCH |
| HB1-4287-000 | 16 - 3 | STOPPER, CARTRIDGE |
| HB1-4288-000 | 4 - 10 | GUIDE, CABLE |
| HB1-4289-000 | 7 - 10 | MOUNT, SHAFT |
| HB1-4291-000 | 7 - 18 | COVER, BOTTOM |
| HB1-4295-000 | 6 - 17 | GUIDE, CABLE,SCNT |

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|
| HB1-4296-000 | 7 - 6 | GUIDE, CASSETTE,PAPER FEED |
| HB1-4297-000 | 7 - 7 | PAD, SEPARATION |
| HB1-4298-000 | 7 - 8 | SUPPORT, SEPARATION PAD |
| HB1-4299-000 | 6 - 3 | ARM, DETECTION (RPS) |
| HB1-4300-000 | 6 - 5 | MOUNT, ARM,DETECTION |
| HB1-4301-000 | 7 - 4 | GUIDE, CABLE,NCU |
| HB1-4307-000 | 11 -8 | ROLLER, DOCUMENT FEED |
| HB1-4309-000 | 10 - 12 | FRAME, ADF UPPER |
| HB1-4310-000 | 10 - 27 | ARM, DETECTION (DES) |
| HB1-4311-000 | 10 - 10 | ARM, DETECTION (DS) |
| HB1-4313-000 | 10 - 19 | GUIDE, DOCUMENT EJECT |
| HB1-4314-000 | 10 - 21 | LEVER, DOCUMENT RELEASE |
| HB1-4315-000 | 10 - 22 | CLAW, DOCUMENT RELEASE |
| HB1-4316-000 | 1 - 9 | LABEL, WARNING |
| HB1-4317-000 | 10 - 11 | STOPPER, DOCUMENT |
| HB1-4318-000 | 10 - 5 | HOLDER, SENSOR |
| HB1-4321-000 | 9 - 1 | COVER, DOCUMENT GUIDE,LOWER |
| HB1-4322-000 | 8 - 12 | COVER, GEAR |
| HB1-4323-000 | 8 - 9 | COVER, FRONT |
| HB1-4324-000 | 8 - 11 | DUCT, AIR |
| HB1-4325-000 | 8 - 10 | LEVER, ADF RELEASE |
| HB1-4326-000 | 7 - 1 | GUIDE, CABLE,PCNT |
| HB1-4327-000 | 8 - 1 | GUIDE, DOCUMENT FEED,LEFT |
| HB1-4328-000 | 8 - 2 | GUIDE, DOCUMENT FEED,RIGHT |
| HB1-4329-000 | 8 - 15 | COVER, DOCUMENT |
| HB1-4330-000 | 8 - 7 | GUIDE, PAPER EJECT |
| HB1-4331-000 | 4 - 2 | GUIDE, PAPER EJECT |
| HB1-4332-000 | 4 - 1 | COVER, ROM |
| HB1-4333-000 | 4 - 3 | LEVER |
| HB1-4334-000 | 2 - 6 | TRAY, PAPER FEED |
| HB1-4335-000 | 2 - 9 | COVER, GEAR |
|  | 8 - 6 |  |
| HB1-4336-000 | 2 - 4 | GUIDE, PAPER FEED,LEFT |
| HB1-4337-000 | 2 - 5 | GUIDE, PAPER FEED,RIGHT |
| HB1-4338-000 | 2 - 3 | GUIDE, PAPER FEED TRAY |
| HB1-4339-000 | 2 - 2 | TRAY, PAPER FEED |
| HB1-4340-000 | 2 - 1 | TRAY, PAPER FEED,EXTENSION |
| HB1-4343-000 | 21 - 4 | BODY, CASSETTE |
| HB1-4344-000 | 21 - 3 | GUIDE, PAPER WIDTH,RIGHT |
| HB1-4346-000 | 2 - 12 | COVER, UPPER |
| HB1-4347-000 | 3 - 1 | COVER, POWER SUPPLY |
| HB1-4348-000 | 1 - 3 | TRAY, DOCUMENT |
| HB1-4349-000 | 1 - 4 | TRAY, DOCUMENT,EXTENSION |
| HB1-4351-000 | 3 - 3 | GUIDE, CABLE |
| HB1-4352-000 | 4 - 4 | SUPPORT, LEVER |
| HB1-4353-000 | 4 - 5 | SHAFT, SUPPORT,LEVER |
| HB1-4354-000 | 5 - 5 | PIVOT |
| HB1-4357-000 | 1 - 5 | LABEL, DESTINATION |
| HB1-4359-000 | 4 - 9 | COVER, CABLE,MCNT |
| HB1-4360-000 | 1 - 2 | TRAY, SUPPORT |
| HB1-4361-000 | 4 - 21 | SPACER |
|  | 7 - 22 |  |
| HB1-4362-000 | 8 - 8 | SHEET |

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION | PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|---|---|---|
| HB1-4365-000 | 10 - 17 | SHEET, BRUSH, STATIC DISCHARGE | HH2-2959-000 | 6 - 14 | CABLE WITH CONNECTOR, 9P |
| HB1-4367-000 | 18 - 1 | SHEET | HH2-2960-000 | 11 -3 | CABLE WITH CONNECTOR, 9P |
| HB1-4368-000 | 7 - 21 | COVER, SENSOR | HH2-2961-000 | 11 -2 | CABLE, FLAT, 12P |
| HB1-4369-000 | 7 - 2 | SHEET | HH2-2962-000 | 6 - 22 | CABLE WITH CONNECTOR, 2P |
| HB1-4370-000 | 12 - 18 | PLATE, SCANNER | HH2-2964-000 | 6 - 15 | CABLE WITH CONNECTOR, 6P |
| HB1-4371-000 | 10 - 3 | SHEET, OPERATION PANEL | HH2-2965-000 | 11 -20 | WIRE, GROUNDING |
| HB1-4372-000 | 10 - 4 | SHEET, FUNCTION | HH2-2966-000 | 10 - 28 | WIRE, GROUNDING |
| HB1-4373-000 | 10 - 1 | COVER, ONE TOUCH DAIL | HH2-2967-000 | 4 - 8 | WIRE, GROUNDING |
| HB1-4376-000 | 10 - 3 | SHEET, OPERATION PANEL | HH2-2968-000 | 4 - 28 | CABLE WITH CONNECTOR, 3P |
| HB1-4377-000 | 10 - 4 | SHEET, FUNCTION | HH2-2969-000 | 25 - 1 | CABLE WITH CONNECTOR, 6P |
| HB1-4378-000 | 10 - 3 | SHEET, OPERATION PANEL | HH2-2971-000 | 23 - TB1 | CABLE WITH CONNECTOR, 2P |
| HB1-4379-000 | 10 - 4 | SHEET, FUNCTION | HH2-2977-000 | 25 - 2 | CABLE WITH CONNECTOR, 9P |
| HB1-4380-000 | 2 - 14 | SHEET | HH2-2978-000 | 10 - 6 | CABLE WITH CONNECTOR, 3P |
| HB1-4383-000 | 6 - 18 | SHEET | HH2-2992-000 | 7 - 17 | CABLE WITH CONNECTOR, 2P |
| HB1-4384-000 | 13 - 24 | SHEET | HH3-5335-000 | 3 - 2 | POWER SUPPLY UNIT |
| HF5-0399-000 | 10 - 15 | WHITE SHEET UNIT | HH3-5336-000 | 23 - T303 | TRANSFORMER, INVERTER, 1.5VA |
| HF5-0540-000 | 16 - 5 | LOCK, RELEASE COVER | | 23 - T304 | |
| HF5-0541-000 | 17 - 11 | PICK-UP FRAME UNIT | HH3-5337-000 | 23 - T302 | TRANSFORMER, INVERTER, 6.3VA |
| HF5-0542-000 | 17 - 12 | PLATE, MIDDLE | HH3-5338-000 | 23 - T301 | TRANSFORMER, INVERTER, 22VA |
| HF5-0543-000 | 11 - 18 | ROLLER, DOCUMENT EJECT | HH3-5348-000 | 23 - L1 | INDUCTOR |
| HF5-0544-000 | 11 -12 | LOCK, OPERATION PANEL | HH3-5357-000 | 3 - 2 | POWER SUPPLY UNIT |
| HF5-0545-000 | 21 - 1 | GUIDE, PAPER WIDTH,LEFT | HH4-3235-000 | 22 - IC501 | IC, MBCU34102-105, MCU |
| HF5-0547-000 | 12 - 10 | PICK-UP ROLLER UNIT | HH4-3236-000 | 22 - IC10 | IC, HG73C051FD, GATE-ARRAY |
| HG5-1308-000 | 10 - 8 | SEPARATION GUIDE ASS'Y | HH4-3300-000 | 22 - IC26 | IC, UPD703102GJ-A33-024-8EU |
| HG5-2043-000 | 4 - 7 | NCU BOARD ASS'Y | HH4-3340-000 | 22 - IC2 | IC, MR27V1652D, MASK-ROM |
| HG5-2048-000 | 4 - 7 | NCU BOARD ASS'Y | HH4-3369-000 | 1 - 11 | CD-ROM, DRIVER SOFTWARE |
| HG5-2180-000 | 12 - 1 | ACTUATOR UNIT | HH7-2240-000 | 24 - L51 | FIXED INDUCTOR TSU-FL 474 |
| HG5-2186-000 | 13 - 3 | CAM UNIT | | 24 - L52 | |
| HG5-2210-000 | 1 - 6 | CASSETTE ASS'Y (A4) | HH7-2408-000 | 26 - 1 | HANDSET UNIT |
| HG5-2218-000 | 6 - 1 | SCNT BOARD ASS'Y | HH7-2415-000 | 13 - 1 | SOLENOID |
| HG5-2221-000 | 6 - 2 | PCNT BOARD ASS'Y | HH7-2416-000 | 18 - 3 | TONER SENSOR ASS'Y |
| HG5-2223-000 | 7 - 15 | MODULAR BOARD ASS'Y | HH7-2418-000 | 4 - 11 | SOLENOID |
| HG5-2225-000 | 4 - 6 | MCNT BOARD ASS'Y | HH7-2419-000 | 11 - 13 | MOTOR, DOCUMENT FEED |
| HG5-2226-000 | 3 - 8 | INTERFACE BOARD ASS'Y | HH7-2422-000 | 14 - 16 | MOTOR, MAIN |
| HG5-2232-000 | 10 - 2 | OPERATION PANEL UNIT | HH7-2424-000 | 11 - 1 | CONTACT SENSOR UNIT |
| HG5-2233-000 | 7 - 15 | MODULAR BOARD ASS'Y | HH7-2426-000 | 6 - 7 | SPEAKER UNIT |
| HH2-1914-000 | 1 - 8 | MODULAR CORD, 6P | HH7-2427-000 | 24 - T1 | TRANSFORMER, AUDIO |
| HH2-2074-000 | 1 - 8 | MODULAR CORD (GERM) | HH7-2430-000 | 24 - IC1 | IC, HFS113F022A1, HYBRID |
| HH2-2219-000 | 1 - 8 | MODULAR CORD | HH7-2431-000 | 24 - IC4 | IC, H8D2965, HYBRID |
| HH2-2478-000 | 1 - 8 | MODULAR CORD, 2P | HH7-2460-000 | 26 - 1 | HANDSET UNIT |
| HH2-2824-000 | 1 - 8 | MODULAR CORD, 2P | HH9-0259-000 | 6 - 16 | CABLE WITH CONNECTOR, 11P |
| HH2-2946-000 | 6 - 19 | CABLE, FLAT, 21P | HS1-1063-000 | 11 -9 | BUSHING |
| HH2-2947-000 | 7 - 3 | CABLE, FLAT, 14P | HS5-0148-000 | 14 - 12 | GEAR, Z47 |
| HH2-2948-000 | 7 - 5 | CABLE, FLAT, 23P | HS5-0238-020 | 8 - 5 | GEAR, Z16 |
| HH2-2949-000 | 6 - 20 | CABLE, FLAT, 20P | HS5-0254-000 | 2 - 13 | GEAR, Z16 |
| HH2-2950-000 | 6 - 21 | CABLE, FLAT, 16P | HS5-0310-000 | 13 - 2 | GEAR, Z18 |
| HH2-2951-000 | 6 - 6 | CABLE WITH CONNECTOR, 3P | HS5-0311-000 | 11 - 16 | GEAR, Z82D |
| HH2-2952-000 | 4 - 16 | CABLE WITH CONNECTOR, 3P | HS5-0312-000 | 11 - 14 | GEAR, Z59D |
| HH2-2953-000 | 10 - 29 | CABLE WITH CONNECTOR, 6P | HS5-0313-000 | 11 - 15 | GEAR, Z21/Z54 |
| HH2-2954-000 | 6 - 13 | CABLE WITH CONNECTOR, 10P | HS5-0314-000 | 11 - 7 | GEAR, Z40D |
| HH2-2955-000 | 17 - 7 | CABLE WITH CONNECTOR, 3P | HS5-0315-000 | 11 - 10 | GEAR, Z21D |
| HH2-2957-000 | 13 - 14 | CABLE WITH CONNECTOR, 9P | HS5-0316-000 | 11 - 11 | GEAR, Z21/28B |
| HH2-2958-000 | 10 - 24 | WIRE, GROUNDING | HS5-0317-000 | 14 - 14 | GEAR, Z28 |

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|
| HS5-1042-000 | 12 - 6 | BUSH |
|  | 13 - 20 |  |
|  | 14 - 18 |  |
| HS5-1044-000 | 7 - 11 | BUSHING |
| HS5-1089-000 | 13 - 5 | BUSHING |
| HS5-1090-000 | 11 - 19 | BUSHING |
| HS5-1091-000 | 11 - 17 | BUSHING |
| HS5-2075-000 | 18 - 9 | SPRING, PRESSURE |
| HS5-2077-000 | 11 - 6 | SPRING, CLUTCH |
| HS5-2078-000 | 10 - 9 | SPRING |
| HS5-2129-000 | 10 - 16 | SPRING, WHITE SHEET |
| HS5-2141-020 | 2 - 8 | SPRING, SLIDER |
|  | 8 - 3 |  |
| HS5-2192-000 | 4 - 17 | SPRING |
| HS5-2193-000 | 17 - 3 | SPRING, COMPRESSION |
| HS5-2194-000 | 18 - 5 | SPRING |
| HS5-2196-000 | 5 - 2 | SPRING, WIRE |
| HS5-2197-000 | 7 - 14 | SPRING, COMPRESSION |
| HS5-2198-000 | 7 - 9 | SPRING, COMPRESSION |
| HS5-2199-000 | 10 - 14 | PLATE, PRESSURE |
| HS5-2200-000 | 10 - 23 | SPRING |
| HS5-6023-030 | 10 - 26 | ROLLER, BACK UP |
| HS5-6024-000 | 5 - 3 | ROLLER, PAPER GUIDE |
|  | 18 - 10 |  |
| HS5-6068-000 | 12 - 9 | ROLLER, SUB |
| HS5-6069-000 | 10 - 20 | ROLLER, DELIVERY |
| HS5-9012-000 | 5 - 7 | SCREW, TAP M3X6 |
|  | 13 - 21 |  |
| HT1-2148-000 | 1 - 1 | USER'S GUIDE (ENGLISH) |
| HT1-3092-000 | 1 - 1 | USER'S GUIDE (MODELE FRANCE) |
| HT1-5068-000 | 1 - 1 | USER'S GUIDE (DEUTSCH) |
| HY9-0007-000 | 27 - T1 | LUBE, MOLYKOTE EM-50L, GREASE |
| HY9-0022-000 | 27 - T4 | IC-REMOVING TOOL (24-64P) |
| QB1-3593-000 | 7 - 20 | FOOT, PRINTER |
| RB1-2152-000 | 7 - 19 | ROLLER, ARM |
| RB1-7129-000 | 16 - 6 | SPRING, GROUNDING |
| RB1-7172-000 | 13 - 13 | SPRING, GROUNDING |
| RB1-7185-000 | 17 - 2 | ARM, PLATE, LEFT |
| RB1-7193-000 | 12 - 8 | CAM, LEFT |
| RB1-7194-000 | 12 - 11 | CAM, RIGHT |
| RB1-7205-000 | 13 - 16 | SPRING, TORSION |
| RB1-7206-000 | 17 - 10 | HOLDER, ARM |
| RB1-7236-000 | 20 - 8 | PIN, CONTACT |
| RB1-7237-000 | 20 - 6 | PIN, CONTACT |
| RB1-7246-000 | 16 - 12 | BUSHING |
| RB1-7247-000 | 15 - 1 | GUIDE, PAPER |
| RB1-7257-000 | 15 - 9 | BUSHING, SPRING |
| RB1-7284-020 | 19 - 3 | ROLLER, FACE DOWN |
| RB1-7286-000 | 19 - 4 | SPRING, WIRE |
| RB1-7287-000 | 19 - 6 | SPRING, WIRE |
| RB1-7288-020 | 15 - 7 | BUSHING |
| RB1-7293-030 | 15 - 12 | LEVER, SENSOR |
| RB1-7294-000 | 15 - 13 | SPRING, TORSION |

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|
| RB1-7334-000 | 19 - 9 | GUIDE, JAMMED PAPER REMOVAL |
| RB1-7341-030 | 15 - 2 | GUIDE, SUB, CARTRIDGE, RIGHT |
| RB1-8170-000 | 14 - 1 | LEVER, RELEASE, D |
| RB2-1655-000 | 20 - 2 | BUSHING |
| RB2-1656-000 | 20 - 4 | BUSHING |
| RB2-1657-000 | 20 - 1 | ELIMINATOR, STATIC CHARGE |
| RB2-1685-000 | 19 - 5 | ROLLER, FACE UP |
| RB2-1686-000 | 19 - 8 | FRAME |
| RB2-1690-000 | 15 - 15 | BUSHING |
| RB2-1706-000 | 21 - 2 | SHEET, SEPARATION |
| RF5-1513-000 | 14 - 2 | ARM, SWING |
| RF5-1514-020 | 16 - 9 | GUIDE, CARTRIDGE,LEFT |
| RF5-1515-020 | 16 - 8 | GUIDE, CARTRIDGE |
| RF5-1533-000 | 16 - 7 | PLATE, COMMUNITY |
| RF5-1534-000 | 16 - 2 | ROLLER, TRANSFER |
| RF5-2358-000 | 16 - 1 | GUIDE, TRANSFER |
| RF5-2364-000 | 15 - 4 | ROLLER, PRESSURE |
| RF5-2367-000 | 15 - 5 | ROLLER, FEEDER |
| RF5-2368-000 | 15 - 14 | ROLLER, FACE UP |
| RF5-2382-000 | 6 - 12 | COVER, WATERPROOF |
| RG5-3453-000 | 12 - 5 | SWITCH LEVER ASS'Y |
| RG5-3463-000 | 15 - 3 | FIXING ASS'Y |
| RG5-3476-030 | 15 - 16 | FLAPPER |
| RG5-3478-000 | 19 - 1 | SPUR ASS'Y |
| RG5-3479-000 | 19 - 2 | SPUR ASS'Y |
| RG9-1281-000 | 12 - 4 | SCANNER ASS'Y |
| RH2-5330-000 | 23 - TB301 | CONNECTOR, 2P |
|  | 23 - TB303 |  |
| RH6-3384-000 | 23 - R302 | RESISTOR, 3MOHM, 0.5W |
|  | 23 - R319 |  |
| RH6-3858-000 | 23 - R328 | RESISTOR, METAL |
| RS5-0788-000 | 14 - 11 | GEAR, 32T/93T |
| RS5-0789-000 | 14 - 7 | GEAR, 37T |
| RS5-0790-000 | 14 - 10 | GEAR, 54T/19T |
| RS5-0791-000 | 14 - 3 | GEAR, 36T |
| RS5-0793-000 | 14 - 4 | GEAR, 22T |
| RS5-0794-000 | 14 - 5 | GEAR, 24T |
| RS5-0797-000 | 15 - 6 | GEAR, 18T |
| RS5-0798-000 | 14 - 6 | GEAR, 15T |
| RS5-0799-000 | 14 - 8 | GEAR, 51T/17T |
| RS5-2502-000 | 17 - 5 | SPRING, COMPRESSION |
| RS5-2504-000 | 20 - 3 | SPRING, COMPRESSION |
| RS5-2505-000 | 20 - 5 | SPRING, COMPRESSION |
| RS5-2508-000 | 15 - 10 | SPRING, COMPRESSION |
| RS5-2512-000 | 20 - 7 | SPRING, COMPRESSION |
| RS5-8543-020 | 19 - 7 | LABEL, "WARNING HIGH TEMP" |
| RS6-0380-000 | 14 - 13 | GEAR, 23T/98T |
| VS1-5057-002 | 16 - 11 | CONNECTOR, 2P |
| VS1-5888-002 | 22 - JP1 | CONNECTOR, PIN 2P |
| WC4-5052-000 | 7 - 16 | MICRO SWITCH |
| WG8-5362-000 | 4 - 14 | IC, TLP1241, PHOTO-INTERRUPTER |
|  | 6 - 4 |  |
|  | 10 - 7 |  |

| PART NUMBER | FIGURE & KEY NO. | DESCRIPTION | PART NUMBER | FIGURE & KEY NO. | DESCRIPTION |
|---|---|---|---|---|---|
| WG8-5362-000 | 13 - 18 | IC, TLP1241, PHOTO-INTERRUPTER | | 7 - 24 | |
| | 17 - 9 | | XB4-7401-209 | 7 - 28 | SCREW, BINDING HEAD, SELF-TPG |
| WK1-5130-000 | 22 - BAT1 | BATTERY, LITHIUM, CR2032/1HS | XB4-7402-009 | 7 - 25 | SCREW, SELF-TAPPING, M4X20 |
| WK1-5131-000 | 22 - C11 | CAPACITOR, ELE, DOUBLE LAYER | XB6-7300-607 | 7 - 26 | SCREW, TP, M3X6 |
| WT2-0317-000 | 4 - 20 | CLIP, CABLE | XB6-7300-807 | 12 - 14 | SCREW, TP, M3X8 |
| | 7 - 30 | | | 14 - 19 | |
| | 11 -24 | | | 15 - 8 | |
| | 12 - 17 | | XB6-7301-205 | 7 - 27 | SCREW, TP, M3X12 |
| | 15 - 18 | | XD2-1100-642 | 13 - 10 | RING, E |
| | 25 - 3 | | XD9-0108-000 | 13 - 4 | PIN, DOWEL |
| WT2-0434-000 | 13 - 19 | CLIP | XD9-0121-000 | 14 - 17 | PIN, DOWEL |
| WT2-5026-000 | 4 - 19 | CLIP, CABLE | XD9-0159-000 | 12 - 13 | PIN, DOWEL |
| WT2-5034-000 | 7 - 29 | BUSHING | | | |
| | 15 - 17 | | | | |
| WT2-5062-000 | 16 - 10 | BUSHING | | | |
| WT2-5089-000 | 4 - 27 | CLAMP | | | |
| WT2-5134-000 | 3 - 7 | CLAMP, CABLE | | | |
| WT2-5465-000 | 26 - 3 | RIVET | | | |
| WT2-5629-000 | 4 - 22 | CLIP | | | |
| WT3-5020-000 | 1 - 7 | CORD, POWER | | | |
| WT3-5023-000 | 1 - 7 | CORD, POWER | | | |
| WT3-5058-000 | 1 - 7 | CORD, POWER | | | |
| WT8-0053-000 | 8 - 14 | REVET | | | |
| XA9-0476-000 | 4 - 23 | SCREW, TP M3X8 | | | |
| | 10 - 31 | | | | |
| XA9-0863-000 | 6 - 9 | SCREW, TAP M3X6 | | | |
| | 16 - 14 | | | | |
| XB1-2300-407 | 11 -23 | SCREW, BH3X4 (S) | | | |
| XB1-2300-807 | 3 - 5 | SCREW, CROSS-RECESS, FCH | | | |
| | 4 - 25 | | | | |
| | 13 - 23 | | | | |
| XB3-6300-800 | 3 - 4 | SCREW, RS, M3X8 | | | |
| | 4 - 26 | | | | |
| | 5 - 6 | | | | |
| | 6 - 10 | | | | |
| | 12 - 16 | | | | |
| | 15 - 11 | | | | |
| | 16 - 13 | | | | |
| XB3-6301-000 | 2 - 11 | SCREW, RS, M3X10 | | | |
| XB4-7300-807 | 2 - 10 | SCREW, TAP TIGHT, BINDING HEAD | | | |
| | 7 - 23 | | | | |
| | 8 - 13 | | | | |
| | 10 - 30 | | | | |
| | 11 -22 | | | | |
| | 12 - 15 | | | | |
| | 17 - 13 | | | | |
| | 18 - 11 | | | | |
| XB4-7301-007 | 4 - 24 | SCREW, TAP TIGHT BH3X10 | | | |
| XB4-7301-009 | 8 - 16 | SCREW, BINDING HEAD SELF-TPG | | | |
| XB4-7400-807 | 21 - 5 | SCREW,TAPPING,TRUSS HEAD,M4X8 | | | |
| XB4-7401-007 | 3 - 6 | SCREW, PAN HEAD SELF-TAPPING | | | |
| | 5 - 8 | | | | |
| | 6 - 11 | | | | |

6-5

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